Essays in Auditor Regulation: Evidence from the EU

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King's College London

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2017

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Acknowledgements

The past four years as a PhD student have been memorable, exciting and sometimes challenging. I am very happy to have finally completed my PhD dissertation. During my PhD studies, I have learned a lot and am very grateful to all who have helped me.

First and foremost, I thank my lead supervisor, Professor Annita Florou, who has given me considerable help and instruction over the last four years. Since the beginning of my PhD at King's, she has taught me how to do research and has encouraged and supported me whenever I had difficulties. Her motivating feedback and enthusiasm for research have always kept me going. I also thank my second supervisor, Dr Yong Li, who has given me useful feedback and instruction during my PhD studies.

I extend my gratitude to members of my assessment committee, Professors Mark Clatworthy and Kevin McMeeking, whom I thank for their time and effort in evaluating my dissertation. I also thank my PhD coordinator, Professor Jon Hindmarsh for providing help and input whenever needed, and the faculty and PhD students of the Management Department, who provided me with a memorable experience of studying at King's College London.

Finally, my deepest gratitude goes to my parents. I appreciate their love, support, and the fact that they are always there for me. Thank you.

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Abbreviations

ACCA	Association of Chartered Certified Accountants
AICPA	American Institute of Certified Public Accountants
AIM	Alternative Investment Market
AOC	Auditor Oversight Commission (Germany)
ASB	Auditing Standards Board
CEAOB	Committee of European Auditing Oversight Bodies
CMVM	Portuguese Securities Market Commission
CPA	Institute of Certified Public Accountants in Ireland
EC	European Commission
EEA	European Economic Area
FRC	Financial Reporting Council
IAASA	Irish Auditing and Accounting Supervisory Authority
IAASB	International Auditing and Assurance Standards Board
ICAC	Accounting and Auditing Institute (Spain)
ICAEW	Institute of Chartered Accountants in England and Wales
ICAI	Institute of Chartered Accountants in Ireland
ICAS	Institute of Chartered Accountants of Scotland
ICJCE	Instituto de Censores Jurados de Cuentas de España (Spain)
ICPAI	Institute of Certified Public Accountants in Ireland
IFIAR	International Forum of Independent Audit Regulators
IFRS	International Financial Reporting Standards

IIPA	Institute of Incorporated Public Accountants
ISAs	International Standards on Auditing
LSE	London Stock Exchange
OROC	Portuguese Institute of Statutory Auditors.
PCAOB	Public Company Accounting Oversight Board
POA	Public oversight authority
REA	Registro de Economistas Auditores (Spain)
REGA	Registro General de Auditores (Spain)
SOX	Sarbanes–Oxley Act
WPK	Wirtschaftsprüferkammer (German Chamber of Public Auditors)

Statement of joint and solo work

This thesis is on auditor regulation in Europe. It has five chapters: introduction (Chapter 1), historical review of audit regulation in the EU and literature review (Chapter 2), two empirical chapters (Chapters 3 and 4), and conclusion (Chapter 5). The first empirical chapter (Chapter 3), which examines the costs and benefits of public oversight design in Europe, is a joint work with lead supervisor, Professor Annita Florou. The second empirical chapter (Chapter 4) is a solo paper investigating the consequences of inspection rating for audit pricing, audit firm tenure and audit quality in the UK.

Summary

With the publication of Directive 2006/43/EC, a system of public oversight over the audit profession was implemented across the European Union. This thesis analyses the resulting costs and benefits of national external audit monitoring systems, and evaluates the efficiency and effectiveness of public oversight practices in Europe.

First, it reviews the development of audit regulation in Europe, both before and after the release of Directive 2006/43/EC. It then reviews previous studies on the effects of regulation and cost-benefit analyses. Besides, it reviews studies specifically on public oversight systems, mainly in the United States (US), with a small number outside the US. The literature suggests there is mixed evidence for the efficiency and effectiveness of the public oversight system in the US, and further research is needed on public oversight systems, particularly in institutional settings outside the US. The two empirical chapters explore the audit pricing and quality consequences of the inspection regime, at pan-European and UK levels. Both studies find an increase in audit prices but no apparent impact on audit quality associated with audit inspection practice.

This thesis contributes to the literature on audit regulation and has implications for policy making by auditing regulators.

Chapter 1: Introduction

The scandal of several accounting failures in the early 21st century (e.g. Enron and WorldCom) has severely diminished public confidence in the audit profession (e.g. Lennox 2009). In order to restore public confidence, there has been a trend for significant modifications to oversight of the audit profession (Groff and Hocevar 2009). As a member of the Public Company Accounting Oversight Board (PCAOB) stated, 'Inspections is [sic] the Board's core function [and] the fundamental tool Congress gave the Board to restore public confidence in audited financial reporting' (PCAOB 2005, cited by DeFond 2010, p.101).[1]

In Europe, a system of public oversight over the audit profession was implemented across the European Union with the publication of Directive 2006/43/EC. Compared with a self-regulating system, oversight of the audit profession by an independent organisation enhances the integrity of audit services (e.g., Anantharaman 2007; Carcello, Hollingsworth, and Mastrolia 2011; Gramling, Krishnan, and Zhang 2011; Gunny and Zhang 2013). However, the functioning and efficacy of the new oversight bodies have been subject to criticism (e.g. DeFond 2010; Lennox and Pittman 2010; Caramanis, Dedoulis, and Leventis 2015; Samsonova-Taddei and Humphrey 2015). This criticism relates to the lack of expertise or experience of oversight staff, the sweeping powers of the oversight authority, and ineffective feedback in its inspection reports (Simnett and Smith 2005; Palmrose 2006; Glover, Prawitt, and Taylor 2009;

[1] The PCAOB was set up by the passage of Sarbanes-Oxley Act of 2002 (SOX), and is mainly responsible for public oversight of the audit profession in the US.

DeFond 2010; Lennox and Pittman 2010). Niskanen (2006) goes so far as to state that 'The expensive new Public Company Accounting Oversight Board (PCAOB) is especially unnecessary … it is a private monopoly that has been granted both regulatory and taxing authority.'

In this context, this thesis analyses the costs and benefits of national external audit monitoring systems, and evaluates the efficiency and effectiveness of public oversight practice in Europe. Efficiency refers to whether potential benefits come at a cost. This thesis uses audit fees and audit firm switching to measure such costs. Effectiveness refers to the extent to which a national public oversight system is successful in producing the desired result (e.g. enhancing audit quality). This thesis employs accruals-based proxies and auditors' opinions to capture such benefits.

The remainder of this thesis proceeds as follows. Chapter 2 presents a review of audit regulation development in Europe. This relates specifically to the legislative development of public oversight before and after the publication of Directive 2006/43/EC, including consideration given to setting up a harmonised oversight structure before 2006, the publication of Directive 2006/43/EC in 2006, and further steps to refine and elaborate on the shape of the public oversight system after 2006.

Chapter 2 then presents a review of previous studies, focusing first on a broad stream of literature on the effects of regulation and on cost-benefit analyses, based on Leuz and Wysocki (2016), and then on literature relating specifically to public oversight systems. These include public oversight studies based on the US and a few studies outside the US. Some US studies support the current national public oversight system

and consider that it has had a positive impact on audit quality, whereas others consider that the inspection regime is ineffective and does not bring corresponding benefits. Of the few studies based outside the US, some analyse quality assurance systems and others conduct cost-benefit analyses. Overall, there is mixed evidence for the efficiency and effectiveness of the public oversight system in the US, and further research is still needed on public oversight systems, particularly in institutional settings outside the US.

Chapters 3 and 4 analyse the consequences of public oversight systems for audit pricing and audit quality, and evaluate the efficiency and effectiveness of public oversight practice in Europe. The mandatory adoption of public oversight in 2006 required all EU member states to establish effective systems for public oversight of the audit profession. However, the ways in which the Directive has been implemented may have severely affected the degree to which it has achieved its goal of protecting the interests of investors. Chapter 3 presents a joint study of cross-country differences in the design of public audit oversight systems across the EU in order to provide a comprehensive analysis of the costs and benefits of the new audit regulation regime. In doing so, it examines the consequences for audit fees and audit quality of three potentially important features of the public oversight system: a) the composition of the public oversight authority (POA); b) the POA's concentration of power; and c) the content of inspection reports. POA composition is measured by the mixture of non-practitioners and practitioners; concentration of power examines the extent to which the POA has responsibility for the three functions of inspection, investigation and discipline; and the content of inspection reports is based on whether they provide an overall rating

of the quality of the audit firm under review.

Drawing on a hand-collected dataset covering 24 EU countries for the period 2005–2013, Chapter 3 documents wide variation in audit regulation systems across the EU. The study also reveals an economically significant increase in audit fees when only non-practitioners participate in audit firms' national regulatory body or when the entire quality assurance process is performed by a POA. Thus, the findings suggest that audit costs increase when audit firm oversight is carried out by independent and potentially more objective POA members or by oversight authorities with greater enforcement power and potentially more efficient processes. However, no differences in audit quality are detected associated with alternative public oversight design choices.

Having analysed POA characteristics at a pan-European level, Chapter 4 focuses on the UK and measures the potential costs and benefits of providing an overall quality rating for inspected audit firms. In the UK, audit inspection reports provide a detailed review of each inspected audit firm, including an overall quality rating for each audit engagement reviewed. The four points on the rating scale are Good, Limited Improvements Required, Improvements Required, and Significant Improvements Required. Accordingly, the costs and benefits of providing a summary score for the quality of the inspected audit firm are examined. The costs relate to the effect on audit fees and the likelihood of clients switching audit firms, while the benefits refer to the quality of assurance provided by the audit firms.

Drawing on a large sample of UK-listed firms over the period 2008–2016, Chapter 4 reveals a significant increase in audit fees when the audit firm has a higher proportion

of engagements with low ratings, which may arise from the additional effort required to meet Financial Reporting Council (FRC) requirements. Moreover, this significant increase in audit fees is more concentrated among firms with Big 4 audit firms. However, no evidence is found to suggest that FRC ratings may affect firms' likelihood of switching audit firms, nor is any significant relationship found between FRC ratings and audit quality. This suggests that FRC ratings may not be perceived by audit committees as a signal of audit quality, and that inspections may be unable to distinguish between high- and low-quality audits.

Chapter 5 concludes by providing a summary of the main results, implications and limitations of this thesis. The thesis contributes to the literature on audit regulation changes and their impact on auditor behaviour and incentives. Specifically, it contributes to debates on the trade-off between expertise and independence, the quality of the content of audit firm inspection reports, and the value of the audit firm inspection process. The results have implications for policy makers and regulators.

Chapter 2: Historical and Literature Reviews of Audit Regulation in the EU

This chapter provides a review of the audit regulation in the EU. In doing so, this chapter describes the development of the quality assurance systems across EU Member States and helps us understand the institutional settings exploited in the two empirical chapters (i.e. Chapter 3 and 4). It then reviews a broad stream of literature on the effects of regulation and cost-benefit analyses, before turning specifically to studies of public oversight systems for the audit profession.

2.1 Historical review of audit regulation in the EU

2.1.1 Audit regulation before 2006

Prior to the publication of Directive 2006/43/EC, a harmonised oversight structure for the audit profession had already been considered in Europe, and the European Commission (EC) had adopted various harmonised measures to develop a system of quality assurance for statutory audits across Europe (FEE 2006).

In 1998, following its communication on 'Statutory Audit in the European Union: The Way Forward', the EC created a Committee on Auditing, which proposed to take further action and cooperate closely with the accounting profession (Osma, Gisbert, and De las Heras 2014). Following the creation of this Committee, in November 2000, the EC issued its 'Recommendation on Quality Assurance for the Statutory Audit in the European Union: Minimum Requirements' (FEE 2006), which stipulated minimum requirements for the implementation of public oversight in each EU member state (Osma et al. 2014). For example, with regard to membership, the recommendation

stated that POAs should have a majority of non-practitioners on their boards (EC 2000, p.95). With regard to public reporting, the recommendation required the results of quality assurance to be adequately reported, but did not require the results of quality assurance to be disclosed for individual audit firms. On disciplinary sanctions, it required POAs to initiate sanctions for auditors or audit firms receiving negative outcomes, including the 'possibility of removal of the statutory auditor from the audit register' (EC 2000, p.95). The recommendation also stated that those undertaking reviews should have 'appropriate professional education and relevant experience combined with specific training on quality assurance reviews' (EC 2000, p.96).

In 2003, the Commission published a communication to the Council and the European Parliament 'Reinforcing Statutory Audit in the EU' (EC 2003a). This set out a plan to coordinate the mechanisms and harmonise public oversight systems across the EU. Specifically, the communication listed certain issues that required resolution across the EU:

> *(a) the scope of oversight (e.g. education, licensing, standard setting, quality assurance, disciplinary systems), (b) the competences of oversight (e.g. investigative and disciplinary powers), (c) the composition of oversight boards (e.g. majority of non-practitioners, proper nomination procedures), (d) the transparency of oversight (e.g. publication of annual work programmes and activity reports), (e) the funding (e.g. not solely by the audit profession)* (EC 2003a, p.5).

The issues set out in this communication helped the Commission to establish a plan to develop minimum requirements for public oversight for inclusion in the 8th EU Directive. However, although the EC had already adopted various harmonised measures to develop a system of quality assurance in the audit profession before 2006, there was variation in quality assurance systems across Europe because implementation of these harmonised measures was not mandatory.

Before 2006, there were numerous oversight structures for quality assurance of the audit profession across Europe. These can be grouped into three types: (a) professionally self-regulated or peer-reviewed, (b) governmental public oversight, and (c) mixed or unclearly defined oversight systems (Osma et al. 2014). Table 2.1 categorises oversight structures in European countries prior to the introduction of the 2006 Directive.

Table 2.1 indicates some variations in quality assurance systems prior to publication of the 2006 Directive. Most of the 30 European countries, including Denmark, France and the UK, had no tradition of public oversight but had long-standing systems of self-regulation or peer review in which the audit profession played a significant supervisory role (Osma et al. 2014). By contrast, few countries had governmental public oversight systems, and only three countries (Finland, Malta and Sweden) had a separate public authority solely responsible for public oversight. Finally, eight countries had a mixed (Belgium, Germany, Norway and Spain) or unclearly defined system (Austria, Greece, Italy and Portugal) prior to adoption of the Directive.

Table 2.1: Oversight structures prior to adoption of Directive 2006/43/EC in Europe

Country	**Peer-Reviewed**	**Governmental Public Oversight**	**Mixed or unclearly defined**
Austria			√
Belgium			√
Bulgaria	√		
Croatia	√		
Cyprus	√		
Czech Republic	√		
Denmark	√		
Estonia	√		
Finland		√	
France	√		
Germany			√
Greece			√
Hungary	√		
Iceland	√		
Ireland	√		
Italy			√
Latvia	√		
Lithuania	√		
Luxembourg	√		
Malta		√	
Netherlands	√		
Norway			√
Poland	√		
Portugal			√
Romania	√		
Slovakia	√		
Slovenia	√		
Spain			√
Sweden		√	
United Kingdom	√		

Source: FEE 2006; Osma et al. 2014; IFIAR 2013; Audit Council 2017

Two countries that had professionally self-regulated peer-review systems were the Czech Republic and Ireland. The current POA in the Czech Republic is the Audit Public Oversight Council, which was created in 2009. Previously, quality assurance was the designated responsibility of a professional institute, the Chamber of Auditors. Under

the Chamber, Supervisory and Disciplinary Commissions had authority to monitor and examine audit services performed by auditors and audit firms (FEE 2006).

The Irish Auditing and Accounting Supervisory Authority (IAASA) has been Ireland's POA since 2006. Prior to that, quality assurance in the audit profession was the responsibility of two professional accountancy bodies, the Institute of Chartered Accountants in Ireland (ICAI) and the Institute of Certified Public Accountants in Ireland (ICPAI) (FEE 2006). These two institutions took responsibility for quality assurance, which included registering and monitoring auditors (FEE, 2006).

Examples of countries that had governmental public oversight prior to 2006 are Malta and Sweden. Malta has a long-term tradition of governmental public oversight. Its POA is the Accountancy Board, an independent body appointed by the Minister and established under the provisions of the Accountancy Profession Act 1979 (FEE 2006). This body is responsible for quality assurance enforcement, and disciplinary measures and sanctions (FEE 2006).

A public oversight system has existed in Sweden for a long time, and the POA is the Supervisory Board of Public Accountants. This body was set up by the Swedish Parliament in the Auditors Act 1995, succeeded by the Auditors Act 2001 (IFIAR 2013). Its responsibilities include supervision, examination and enforcement of the audit profession's compliance with standards in Sweden (FEE 2006; IFIAR 2013).

Amongst countries with mixed or unclearly defined oversight systems, Germany had a mixed oversight system prior to adoption of the Directive. Public oversight activities in Germany at that time were carried out jointly by the German Chamber of

Public Auditors (WPK) and the Auditor Oversight Commission (AOC), which was the POA established by the Auditor Oversight Act (FEE 2006; Osma et al. 2014).

Spain's POA, prior to the implementation of Directive 2006/43/EC, was the Accounting and Auditing Institute (ICAC), and its organic structure was established in 1989 (IFIAR 2013).[2] Quality assurance activities were also carried out by three other professional institutes in Spain: The Registro de Economistas Auditores (REA), The Registro General de Auditores (REGA) and The Instituto de Censores Jurados de Cuentas de España (ICJCE) (Osma et al. 2014).

2.1.2 Directive 2006/43/EC

In order to harmonise supervision procedures for the audit profession and minimise differences between quality assurance systems in Europe, in 2006, the EC published Directive 2006/43/EC on 'statutory audits of annual accounts and consolidated accounts'. With the release of this Directive, a public oversight system was implemented across Europe, and each EU member state was required to establish a system of public oversight over the audit profession. The Directive stipulated requirements for the design of public oversight systems, such as the powers of the POA (2006/43/EC, article 32(4)), the frequency of inspections (2006/43/EC, article 29 (1h); article 43), the scope of inspections (2008/362/EC, paras. 17 and 19), and the disclosure of inspection results (2008/362/EC, para. 20). The content of this Directive is described in more detail in Chapter 3.

[2] Although ICAC was set up in 1989, Spain did not incorporate the provisions of Directive 2006/43/EC until 2011, following approval of Royal Legislative Decree 2011 (IFIAR 2013).

Following several accounting scandals (e.g. Enron and Worldcom) and the collapse of Arthur Andersen in the early twenty-first century, public confidence in the audit profession had been heavily undermined (e.g. Campbell and Houghton 2005; Groff and Hocevar 2009; Lennox 2009). This led to a general trend for reinforcement of regulation over the auditing profession to strengthen investors' confidence in financial reporting at that time. Reflecting this trend, the 2006 Directive proposed to improve the transparency and reliability of statutory audits by focusing on the importance of professional standards, independence and ethics, as well as promoting high-quality qualification requirements, including International Standards on Auditing (ISAs) (EFAA 2007). In implementing this Directive, the aforementioned EU Recommendation 2000 was recognised in law (FEE, 2006). The Recommendation was intended to 'provide useful explanatory material and guidance as to how the requirements in Article 29 – on quality assurance systems – of the Statutory Audit Directive can be implemented', whereas the Directive was 'more stringent' (FEE 2006).[3]

Nevertheless, the Directive was subjected to criticism. First, it permitted considerable differences in the designs of quality assurance systems. According to information from the Durham European Law Institute (2013), the 2006 Directive gave each EU member state considerable discretion in its implementation where corresponding national measures were diverse across the EU. It is therefore

[3] For example, the 2006 Directive specified the time within which full coverage of all audit firms should be achieved (FEE, 2006).

questionable whether the Directive could achieve a uniformly high quality of auditing services across Europe. According to Groff and Hocevar (2009):

> *Although the new requirements related to the audit profession entailed adjustments in national legislation of the Member States, the Directive still allows for considerable differences regarding how external quality assurance systems for statutory auditors and audit firms can be set up*.

Second, despite being an important part of POAs' powers, the Directive only briefly mentioned investigations and sanctions, and provided no detail on investigation and sanctioning procedures (FEE 2014). For example, it did not give a detailed list of sanctions that POAs could impose on auditors or audit firms. Finally, despite being a pan-European reform, the 2006 Directive did not set up an organised body or group to facilitate cooperation between POAs across Europe, including coordination of the tasks required by the new legislation (FEE 2014).

2.1.3 Development of public oversight after 2006

With the publication of Directive 2006/43/EC, public oversight of the audit profession was implemented across Europe. The EC then took further steps to refine and elaborate on the shape of public oversight, addressing some matters which were not clearly defined in Directive 2006/43/EC.

In May 2008, the EC issued a 'Recommendation on external quality assurance for statutory auditors and audit firms auditing public interest entities'. This Recommendation focused specifically on the quality assurance of public interest entities and outlined certain concepts in greater detail (FEE 2008):

(a) **Inspector**s: The Recommendation clearly stated the criteria that inspectors should meet (2008/362/EC, pp.21–23). For example, they could not be associated with a practising statutory auditor, and a two-year cooling-off period was required after they had ceased any association with the practising auditors or audit firms with which they had previously been associated (2008/362/EC, p.22).

(b) **Scope of inspections**: Inspections were required to cover the internal quality control policies, procedures and standards of the audit firm, conduct adequate compliance testing of procedures and a review of audit files, and assess the most recent annual transparency report (2008/362/EC, p.23).

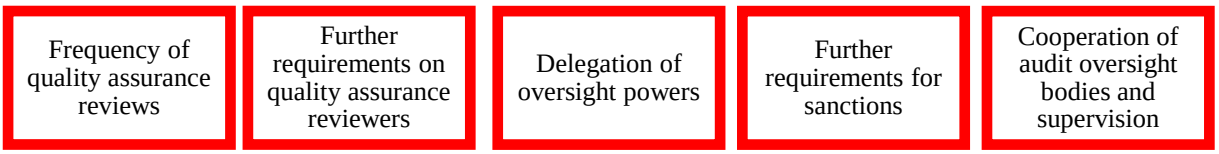
(c) **Outcomes of inspections**: The competent authority was required to communicate appropriately and discuss the inspection findings and conclusions with the audit firm before an inspection report was finalised (2008/362/EC, p.23). Based on this, the audit firm was allowed a maximum of 12 months from the issuance of the inspection report to take action in respect of the recommendations (2008/362/EC, p.23). In case of inappropriate follow-up, the POA was required to disclose any major deficiencies in the internal quality control system (2008/362/EC, p.23).

In addition, the POA was required to inform the public in a timely and appropriate manner of any final disciplinary actions taken or penalties imposed on auditors or audit firms, and to provide details of the statutory audit firm concerned and the major deficiencies associated with the disciplinary action or penalty (2008/362/EC, p.23). Any significantly misleading transparency reports were to be amended in a timely manner (2008/362/EC, p.24), and POAs were to report annually on the overall results

of the quality assurance system (2008/362/EC, p.24).

Following several years of discussion, Directive 2014/56/EU was published in May 2014. Most criteria remain unchanged from the 2006 Directive (FEE 2014), but some changes are relevant to quality assurance. These are summarised in Figure 2.1.

Figure 2.1: Changes to Directive 2006/43/EC



Source: FEE, 2014; EC 2006, 2014a, 2014b

(a) *Frequency of quality assurance reviews*: Under the 2006 Directive, quality assurance reviews had to take place at least every six years (2006/43/EC, article 29(1)(h)). Under the 2014 Directive, the frequency of reviews is based on analysis of the risk, while the maximum period between reviews remains six years (2014/56/EU, article 1(24)(a)(ii)).

(b) *Further requirements on quality assurance reviewers*: The new Directive places further requirements on quality assurance reviewers, namely that: (a) they should have professional education, relevant experience and specific training on quality assurance reviews; (b) at least three years must have elapsed since they have ceased to have any association with the statutory audit firm to be reviewed; (c) they are required to declare that there are no conflicts of interest between them and the statutory audit firm to be reviewed (2014/56/EU, article 1(24)(b)).

(c) *Delegation of oversight powers*: Directive 2006/43/EC stated that the quality assurance system should be the responsibility of the competent authority, governed by non-practitioners, but the competent authority could ask practitioners and

experts to assist in its task (2006/43/EC, article 32). Directive 2014/56/EU clearly states that the competent authority may 'delegate or allow the competent authority to delegate any of its tasks to other authorities or bodies designated or otherwise authorised by law to carry out such tasks' (2014/56/EU, article 32(4) (b)). However, Regulation 537/2014 places some restrictions on the delegation of oversight powers relevant to the review of audits for public interest entities (PIEs). Specifically, the competent authority cannot delegate quality assurance, investigation, or sanctions and measures relating to quality assurance reviews or investigation of statutory audits of PIEs (No 537/2014, p.81).

(d) *Further requirements for sanctions:* The 2006 Directive only briefly mentioned the system of investigations and sanctions. Specifically, it stated that there should be 'an effective system of investigations and sanctions to detect, correct and prevent inadequate execution of the statutory audit' (2006/43/EC, article 30(1)). It required member states to provide for sanctions where statutory auditors and audit firms had not carried out an audit in conformity with the provisions stipulated in the Directive (2006/43/EC, article 30(2)). The Directive also required the public disclosure of sanctions imposed on auditors or audit firms (2006/43/EC, article 30(3)). In comparison, the 2014 Directive gives a more detailed statement of sanctioning procedures (FEE 2014). It lists a series of sanctioning measures that the competent authority may impose on auditors and audit firms, including a public statement of a person's breaches, and prohibition from conducting audits (2014/56/EU, article 30a). The 2014 Directive outlines ways in which the competent authority may

impose sanctions, either directly, in collaboration with other authorities or by applying to judicial authorities (2014/56/EU, article 30a). It sets out factors that the competent authority should consider when imposing sanctions, for example the gravity and duration of the breach, and previous breaches by those responsible (2014/56/EU, article 30b). It also contains guidelines on the publication of sanctions and measures. For example, the authority is required to publish details of administrative sanctions imposed for any breaches on its official website (2014/56/EU, article 30c). The 2014 Directive also provides for the exchange of information regarding sanctions imposed and administrative measures taken by the competent authority. This is to be communicated to the Committee of European Auditing Oversight Bodies (CEAOB), which will include this information in its annual report. The competent authority must also communicate immediately with the CEAOB regarding all temporary prohibitions imposed on auditors or audit firms (2014/56/EU, article 30f).

(e) *Cooperation of audit oversight bodies and supervision*: Directive 2014/56/EU set up a new body, the CEAOB, which is responsible for coordinating the activities of national competent authorities (2014/56/EU, article 14.3).

Compared with the 2006 Directive, the new Directive provides greater transparency and more detailed requirements pertaining to quality assurance systems (e.g. delegation of oversight powers, sanctioning procedures). According to the FEE (2018), the new Directive has had a significant impact on the organisation of public oversight of the audit profession. Specifically, it improves the coordination of audit

supervision and facilitates auditors in operating across the EU (ICAEW 2018). For example, the CEAOB will coordinate the activities of national competent authorities (2014/56/EU, article 14.3).

Nevertheless, it is too early to claim that the new Directive has been entirely successful. For example, with the implementation of the new Directive, the POA plays a greater role, as certain oversight functions can no longer be delegated to other bodies regarding audits of PIEs. According to the FEE (2018), POAs are now responsible for additional activities previously carried out by professional bodies. More powerful oversight authorities may, to some extent, increase the efficiency of the overall quality assurance system (Gunny and Zhang 2013), but highly concentrated power may limit POAs' accountability and transparency due to fewer 'checks and balances' (Campbell and Houghton 2005; Glover et al. 2009), which will reduce the rigour of audit scrutiny. Therefore, further evidence is required to determine the efficiency and effectiveness of the regime outlined by the new Directive.

2.1.4 Summary of audit regulation development in the EU

Prior to 2006, as a result of several accounting scandals in the early twenty-first century, the EC was considering ending the long-standing practice of self-regulation and setting up a harmonised public oversight structure for the audit profession. Steps taken in this regard included the establishment of the Committee on Auditing in 1998, the release of the 'Recommendation on quality assurance for the statutory audit in the European Union: Minimum requirements' in 2000, and the 'Communication from the Commission to the Council and the European Parliament reinforcing statutory audit in

the EU' for the audit profession in 2003. However, as there was no mandatory requirement for the adoption of a public oversight system before 2006, quality assurance across Europe was somewhat diverse. With the publication of the 2006 Directive, a public oversight system was mandatorily implemented across Europe, and each EU member state was required to establish a system of public oversight over the audit profession. However, as this Directive only established basic principles and minimum requirements for the organisation of public oversight, each member state had considerable flexibility to interpret this provision and design its own POA, resulting in heterogeneous POA designs around Europe. After 2006, the EC took further steps to refine and detail the shape of public oversight, including the release of Recommendation 2008 and Directive 2014/56/EU. Compared with the 2006 Directive, the 2014 Directive provides greater transparency and predictability of requirements pertaining to audit firms, including the frequency of quality assurance reviews, further requirements on quality assurance reviewers, delegation of oversight powers, further requirements for sanctions and cooperation of audit oversight bodies and supervision. Overall, the early twenty-first century saw the end of an era of self-regulation of the audit profession in Europe and the implementation of a public oversight system across European countries. The EC has continued progressively to shape and refine public oversight systems in Europe.

2.2 Literature review

This section begins by reviewing a broader stream of literature on the effects of regulation and cost-benefit analyses. This is based on Leuz and Wysocki (2016), who provide a very recent and comprehensive review of literature on the economic consequences of disclosure and financial reporting regulation, such as the Sarbanes–Oxley Act (SOX) and International Financial Reporting Standards (IFRS). The focus then turns specifically to studies of public oversight systems for the audit profession.

2.2.1 Review of relevant studies on regulation

The numerous streams of research on auditing and financial reporting provisions include studies on the introduction of the US Securities Act 1933 and Exchange Act 1934 (e.g. Stigler 1964; Jarrell 1981; Simon 1989; Greenstone, Oyer, and Vissing-Jorgensen 2006; Ferrell 2007; Battalio, Hatch, and Loughran 2011; Daines and Jones 2012); Regulation Fair Disclosure (e.g. Bailey, Karolyi, and Salva 2003; Heflin, Shaw, and Wild 2003; Eleswarapu, Thompson, and Venkataraman 2004; Gintschel and Markov 2004; Francis, Nanda, and Wang 2006; Gomes, Gorton, and Madureira 2007; Duarte et al. 2008; Sidhu et al. 2008; Chen, Dhaliwal, and Xie 2010); the SOX (e.g. Alexander et al. 2013; Leuz and Schrand 2009; Iliev 2010; Bargeron, Lehn, and Zutter 2010; Kang, Liu, and Qi 2010; Albuquerque and Zhu 2013; Cohen, Dey, and Lys 2008, Koh, Matsumoto, and Rajgopal 2008, Bartov and Cohen 2009); and IFRS (e.g. Daske et al. 2008; Armstrong, Guay, and Weber 2010; Gordon, Jorgensen, and Linthicum 2010; Hail, Leuz, and Wysocki 2010a, 2010b; Barth et al. 2012; Capkun, Collins, and

Jeanjean 2012; Ahmed, Neel, and Wang 2013; Christensen, Hail, and Leuz 2013; Florou and Kosi 2015).

These studies discuss the costs and benefits of the respective regulations, and analyse the efficiency and effectiveness of government policy. With regard to benefits, some studies measure these using stock returns (e.g. Stigler 1964; Jarrell 1981; Bushee and Leuz 2005; Akhigbe and Martin 2006; Jain and Rezaee 2006; Chhaochharia and Grinstein 2007). For example, Chhaochharia and Grinstein (2007) find that firms that make more changes to comply with SOX earn more positive abnormal returns around key SOX events than firms that are already more compliant. Some studies use other proxies to measure benefits, such as market liquidity (e.g. Daines and Jones 2012; Jain, Kim, and Rezaee 2008; Daske et al. 2008, Christensen et al. 2013), operating performance (e.g. Greenstone et al. 2006), informativeness of analysts' reports and accuracy of forecasts (e.g. Gintschel and Markov 2004; Bailey et al. 2003; Heflin et al. 2003; Agrawal, Chadha, and Chen 2006) and audit quality (e.g. Dyck, Morse, and Zingales 2010; DeFond and Lennox 2011).

With regard to costs, one proxy used to measure these is audit fees (e.g. Iliev 2010; Kim, Liu, and Zheng 2012; De George, Ferguson, and Spear 2013). For example, De George et al. (2013) document a significant increase in audit fees after implementing IFRS for Australian companies, particularly among small companies with greater exposure to audit complexity and compliance costs in transitioning to IFRS. In addition to audit fees, some studies measure cost using debt contracting (e.g. Ball, Li, and Shivakumar 2015; Chen, Harford, and Lin 2015; Brown 2016). For example, Ball et al.

(2015) find that IFRS adoption may be costly for debt contracting.

Overall, different studies use different measures as proxies for the benefits and costs of audit regulation. However, Leuz and Wysocki (2016) provide several important insights and suggestions for future regulation studies. First, they point out that many regulatory studies have been unable to provide causal estimates and identify counterfactuals in order to clearly identify regulatory effects. Second, they suggest that it is important for regulation studies to know the process through which the relevant regulation has arisen. An example is whether policy makers and regulators are under pressure to take corrective action (e.g. after disclosure of a scandal), which may give rise not only to fine-tuning of existing regulation, but also to overreaction and ever-increasing regulation. Third, it is worth paying greater attention to the dynamics and evolution of disclosure and reporting regulation. An example is how the costs and benefits of IFRS evolve over time, for example whether they change at different stages of a country's economic development. Fourth, Leuz and Wysocki indicate the importance of looking at the macroeconomic outcomes of a regulation, such as real investment, consumption and possibly social outcomes. Finally, they point out that a specific regulation is part of a larger institutional system, and it is therefore important to look at its interaction with other government provisions or elements. Overall, Leuz and Wysocki (2016) provide some useful and important insights for empirical studies of government provisions.

2.2.2 Studies on public oversight of the audit profession

Research on public oversight of the audit profession potentially fits within the realm of agency theory (e.g. Arrow 1971; Wilson 1968; Ross 1973; Jensen and Meckling 1976), where the audit client delegates the work to audit firms, and the completed work is supervised by the oversight authority. Research on public oversight began in the last decade, and most studies have been based on the US (e.g. Palmrose 2006; Anantharaman 2007; Hermanson, Houston, and Rice 2007; Lennox 2009; Glover et al. 2009**;** DeFond 2010; Lennox and Pittman 2010; Carcello et al. 2011; DeFond and Lennox 2011; Gramling et al. 2011; Offermanns 2011; Abernathy, Barnes, and Stefaniak 2013; Abbott, Gunny, and Zhang 2012; Acito, Hogan, and Mergenthaler 2013; Bishop, Hermanson and Houston 2013; Gunny and Zhang 2013; Lamoreaux 2013; Nagy 2014; Boone, Khurana, and Raman 2015; Shroff 2015; Gipper, Leuz, and Maffett 2015; DeFond and Lennox 2017). Studies analysing public oversight systems outside the US are very scarce (e.g. Carson, Simnett, and Vaanstraelen 2017; Cheon et al. 2016).

In 2002, with the passage of SOX in the US, the PCAOB was set up with responsibility for conducting regular inspections of firms auditing public companies. Since then, public oversight has replaced self-regulation as the quality assurance mechanism in the US. Several studies shed light on the PCAOB and analyse the consequences of the new inspection regime. Among these, some claim that the establishment of the PCAOB has had a positive effect on the market and has been helpful in strengthening investors' confidence in financial reporting (e.g. DeFond and Lennox 2011; Abbott et al. 2012; Nagy 2014; Gipper et al. 2015; DeFond and Lennox

2017). Others allege that the PCAOB has not brought corresponding benefits and has had no marked impact on the market (e.g. Hilary and Lennox 2005; Glover et al. 2009; Casterella, Jensen, and Knechel 2009; DeFond 2010; Lennox and Pittman 2010). Overall, it is difficult to determine whether the current public oversight system is superior or inferior to the previous peer-review system, and there is no conclusive evidence on the impact of the PCAOB.

Studies supporting the current public oversight system in the US explore the issue from various angles. First, some studies seek to analyse the impact of the public oversight system on audit quality (e.g. Carcello et al. 2011; Gramling et al. 2011). Specifically, Carcello et al. (2011) examine its impact on the quality of audits of Big 4 audit firms following the first two PCAOB inspections. Using abnormal accruals as a proxy for audit quality, they find a significant decrease in abnormal accruals following the first PCAOB inspection, and a continued reduction in abnormal accruals after completion of the second inspection. This reduction is even larger in the second year than in the first. Thus, the results suggest that audit quality improves in each of the first two years following a PCAOB inspection. However, this result only applies to Big 4 audit firms, and whether it is applicable to small audit firms is as yet unknown.

In contrast to Carcello et al.'s (2011) focus on Big 4 audit firms, Gramling et al. (2011) study small audit firms to investigate whether deficiencies identified by the PCAOB are associated with a change in triennially-inspected audit firms' going concern opinions on financially distressed clients. Based on inspections from 2004 to 2006, they find that audit firms with deficiencies found by the PCAOB are more likely to issue a

going concern opinion following the PCAOB inspection; in contrast, there is only limited evidence for such an association for audit firms with no audit deficiencies indicated in their PCAOB inspection reports. These results indicate that audit firms with deficiencies identified by the PCAOB are more likely to 'stand up to the client' and 'be tough' on important reporting issues, or bring a greater level of expertise to bear on the reporting decision.

Rather than measuring actual audit quality, the second group of studies supporting the current public oversight system focuses on perceived audit quality and examines whether the public oversight system may affect audit firms' market share (e.g. Abbott et al. 2012; Nagy 2014). In looking at the signalling role of PCAOB inspection reports, Abbott et al. (2012) find that effective audit committees are very responsive to cases where audit firms receive deficient reports, and this is particularly obvious if the deficiency relates to a GAAP violation. Based on this, their study also finds that clients with less inside ownership are more likely to switch away from an audit firm following a GAAP-deficient PCAOB inspection report. This suggests that effective audit committees and firms with effective external monitoring from outside are more responsive to PCAOB inspection reports of deficiencies.

Abbott et al.'s (2012) study concentrates on deficiencies in part one of the inspection report, which mainly concern deficiencies in the audit engagements under review. Nagy (2014) focuses specifically on deficiencies in part two of the PCAOB inspection report, which contains information about audit firms' quality control systems that is only publicly disclosed if the audit firm fails to mitigate the defects of the quality

control system appropriately within 12 months (e.g. Bishop et al. 2013). Using a sample of audit firms under PCAOB inspection with disclosures of quality control defects, Nagy (2014) examines whether disclosure of these part two defects may affect audit firms' market share. The results show that firms' market share shrinks significantly following public disclosure of part two deficiencies, indicating that audit clients view this part as providing a credible signal of audit quality. The results also indicate that audit clients treat the disclosure of quality control reports as a credible signal of low audit quality, and that clients are more likely to switch from audit firms with this type of disclosure.

Rather than directly measuring the impact of the public oversight system on actual or perceived audit quality as above, a third group of studies examines the implications of the public oversight system for the capital market and clients' financing and investment decisions (e.g. Shroff 2015; Gipper et al. 2015). Regarding the capital market, they examine whether the PCAOB inspection regime strengthens investors' responses to issuers' earnings surprises, in order to establish whether the inspection regime increases the underlying credibility of reported earnings. Gipper et al. (2015) analyse the PCAOB inspection regime to determine whether there is any improvement in capital market responses to unexpected earnings releases. Based on changes in short-window stock market reactions to earnings announcements, they find that the capital market has responded to unexpected earnings increases since the PCAOB inspection regime was established. They also find a rise in abnormal volume responses to clients' 10-K filings under the new regime.

In terms of impact on clients' financing and investment decisions, in order to isolate the exogenous effects of reporting quality, Shroff (2015) tests the reporting quality of non-US audit clients audited by PCAOB-inspected audit firms. Using the PCAOB international inspection programme as a setting in which to examine the effects of the inspection regime on clients' financing and investment decisions, Schroff (2015) finds that the regime does change such decisions when the inspection report is disclosed. More specifically, they find that non-US companies increase their long-term debt (investment) by 11.5 per cent (10.9 per cent) and are more sensitive to investment opportunities. This implies that public oversight by the PCAOB has spillover effects on non-US companies and facilitates their access to financial and other investment resources.

In addition to the above studies, other research also supports the current PCAOB inspection regime (e.g. Anantharaman 2007; DeFond and Lennox 2011; Lamoreaux 2013; DeFond and Lennox 2017). In comparing the peer-review system with public oversight by the PCAOB, Anantharaman (2007) finds that the outcomes of previous peer-review reports provide less credible information about audit firms' audit quality than the public oversight system. She argues that 'firms that themselves review other firms consistently receive more favorable opinions from peer reviews than from PCAOB reviews'. She also suggests that the results of peer-review reports are not objective opinions on the real audit quality of audit firms, as audit firms are able to control peer-review outcomes by choosing 'friendly reviewers'.

DeFond and Lennox (2011) focus specifically on exiting audit firms following the

passage of the SOX. They demonstrate that the establishment of the PCAOB has had a positive effect on the audit market, resulting in 600 small, relatively low-quality audit firms exiting the market since the SOX. In addition, clients of exiting audit firms receive higher-quality audits from successor audit firms. Lamoreaux (2013) compares audit firms in jurisdictions allowing PCAOB inspections with audit firms prohibiting PCAOB inspections, and finds that the former are more inclined to issue a going concern opinion and material weakness for clients than the latter. Overall, this study illustrates that PCAOB inspection exposure may affect audit firms' reporting incentives, thereby influencing audit quality.

Finally, a recent study by DeFond and Lennox (2017) emphasises the deficiencies associated with audit firms' issuance of internal control opinions on audit clients. Their study differs from the many studies looking at all deficiencies in the PCAOB inspection report by focusing specifically on deficiencies in internal control procedures. They find that audit firms that receive higher rates of deficiencies in internal control procedures in their PCAOB reports issue adverse internal control opinions more frequently to their clients. They also find that higher rates of internal control deficiencies may push up audit fees, probably due to costly remediation efforts.

Overall, previous studies provide evidence that the PCAOB inspection regime is effective and brings corresponding benefits. First, the PCAOB inspection regime may shape audit firms' incentives to improve actual audit quality. Second, the inspection regime may affect perceived audit quality, thereby influencing audit firms' market share. Third, PCAOB inspection results are useful in affecting investors' responses to issuers'

earnings surprises and clients' financing and investment decisions. Finally, some studies provide further evidence that the current inspection regime in the US is taken by the market to be credible.

However, alongside studies supporting the current public oversight system in the US, some studies argue that the PCAOB inspection regime is inefficient, and that the inspection results have no value in signalling audit quality (e.g. Hilary and Lennox 2005; Glover et al. 2009; Casterella et al. 2009; DeFond 2010; Lennox and Pittman 2010). Glover et al. (2009) claim that the PCAOB's function and operation have been hampered by its early choices, incentives, organisational composition and structure. Specifically, they find that the PCAOB has neither adequate resources nor the expertise to create standards that might take the place of those set by the Auditing Standards Board (ASB) or the International Auditing and Assurance Standards Board (IAASB) in terms of timeliness and relevance. Moreover, they observe significant flaws in the PCAOB's inspection and enforcement owing to concerns relating to the expertise and incentives of PCAOB staff, the lack of processes and accountability, political motivations and flawed incentives, and ineffective, untimely inspection feedback.

In contrast to Glover et al. (2009), who deal directly with flaws in the PCAOB's function and operation, Lennox and Pittman (2010) analyse the signalling role of PCAOB inspection reports. They find that audit clients do not perceive PCAOB reports to be useful in distinguishing between high and low audit quality. They also find that the invaluable role of PCAOB reports potentially lies in information that the PCAOB does not publish, such as overall quality ratings and information on audit firms' quality

control systems.

Building on Lennox and Pittman's (2010) general results, DeFond (2010) demonstrates that PCAOB inspection results may lack information value. Specifically, he points out that weaknesses identified by PCAOB inspections may not be representative due to concerns about the audit firm's client base or the average audit quality of the audit firm. He also states that the information value of PCAOB inspection results may be further reduced if reports are too detail-oriented and identify trivial and inconsequential audit weaknesses.

Rather than questioning the efficiency and effectiveness of the public oversight system directly, some studies explore the benefits of the long-standing self-regulation system in the US. Based on the outcomes of peer-review reports, Hilary and Lennox (2005) examine whether opinions issued by peer reviewers credibly distinguish audit quality. They find that audit firms gain clients after receiving clean opinions in their peer-review reports and lose clients after receiving modified or adverse opinions. This suggests that peer-review outcomes may provide a credible signal of differences in audit quality between audit firms.

Consistent with Hilary and Lennox's (2005) results, Casterella et al. (2009) use a unique and proprietary dataset from the files of an insurance company to explore the association between peer-review outcomes and audit quality. However, in contrast to Hilary and Lennox (2005), who focus on perceived audit quality, Casterella et al. (2009) test actual audit quality and find that the number of weaknesses identified in a firm's peer-review report is positively related to the likelihood that that firm will have a

malpractice claim filed against it. Furthermore, the types of peer-review deficiencies highlighted in the report are helpful in predicting audit failure (i.e. malpractice claims alleging audit firm negligence). They also provide evidence that peer-review findings are associated with firm-specific indicators of potentially weak quality control or risky practices within audit firms. These results imply that peer-review reports under the self-regulated system of the American Institute of Certified Public Accountants (AICPA) are credible in distinguishing the actual quality of an audit firm.

Overall, these studies suggest that the current PCAOB inspection regime in the US is potentially ineffective and may need further refinement, and it appears that the long-standing peer-review system is more beneficial and may provide signals of differences in audit quality across audit firms.

In addition to studies contributing to debate over the advantages and disadvantages of the PCAOB, other US studies analyse the quality assurance system from different angles. Hermanson et al. (2007) provide descriptive evidence on inspection reports issued to small CPA firms. In analysing 316 PCAOB inspection reports issued to smaller audit firms up to 13 July 2006, they find that around 60 per cent of firms had deficiencies, and that these firms were normally growing faster than firms with no deficiencies. Moreover, they find that deficiencies were more likely to be identified in initial inspections conducted in 2004, and that firms with deficiencies were smaller, less profitable and more highly leveraged. In addition, they find that deficiencies mentioned in inspection reports pertained mainly to substantive procedures and lack of adequate analyses and procedures. Deficiencies tended to concentrate on the balance sheet, and

often related to revenues, receivables, equity and liabilities.

Rather than looking at deficiencies issued for small audit firms, Bishop et al. (2013) measure the PCAOB inspections of international firms. Based on a sample of 175 first-time and 56 second-time inspection reports issued up to 2012, they find that most deficiencies found in inspection reports are quality control defects. Firms with deficiencies are smaller and have more issuer clients than non-deficiency firms. In terms of the rate of deficiencies, they find no significant differences between the PCAOB acting alone or cooperating with a local regulator in carrying out an inspection.

With regard to studies of settings other than the US, a paper by Cheon et al. (2016) is one of very few based on a non-US setting. Based on a study in South Korea, they claim an association between audit quality and inspection results. Specifically, they find that audit quality is associated with both quality control system deficiencies and audit engagement deficiencies reported in inspection reports. Carson et al.'s (2017) study, also focusing on a non-US setting, is one of few that are closely related to the research presented in this thesis. Using a sample of companies from 51 countries over the period 2003–2012, they seek to determine the effectiveness of different forms of public oversight and inspection regimes that have been implemented in different jurisdictions. They find that audit quality has improved in countries with public oversight systems in the post-implementation period, but find only limited evidence supporting any relationship between audit quality and different features of the inspection process.

2.2.3 Summary

This literature review began by reviewing a broad stream of literature on the effects of regulation and cost-benefit analyses, such as the impact of the SOX and IRFS, based on Leuz and Wysocki (2016). It then focused specifically on studies of public oversight systems for the audit profession. The latter potentially fits within the realm of agency theory. Primary studies of public oversight started in the last decade, following the passage of the SOX in 2002, and most have been based on the US. Among these, some support the current public oversight system in the US and consider the PCAOB inspection regime to have had a positive impact on audit quality and to have been beneficial to various stakeholders, including audit clients and investors. However, other studies observe that the PCAOB inspection regime is ineffective and has not brought corresponding benefits. Some US studies analyse the quality assurance system from other angles. In addition to studies of the US system, a few studies analyse the quality assurance systems of non-US settings. Finally, some regulation studies provide cost–benefit analyses.

Overall, there appears to be mixed evidence on the efficiency and effectiveness of public oversight in the US, with mixed conclusions on the quality of the content of audit firm inspection reports and the value of the audit firm inspection process. Therefore, further research is needed on public oversight systems, especially in institutional settings outside the US.

Chapter 3: Costs and Benefits of Public Oversight – Design Evidence from the EU

3.1 Introduction

Having reviewed audit regulation developments in the EU and previous literature on quality assurance systems, this chapter presents the empirical setting of the EU and examines public oversight practices in European countries. In response to a wave of prominent financial reporting failures worldwide, public oversight of audit firms was introduced to restore confidence in the audit profession. Several previous studies have sought to measure the impacts of the new system. Carson et al. (2017) examine the effects of the introduction of public audit oversight on audit quality. Using an international sample for the period 2003 to 2012, they document higher audit quality in the post-inspection period in countries that have periodic inspections under a public oversight system, with a stronger effect for Big 4 audit firms. In addition, they find limited evidence that audit quality varies with inspection characteristics such as frequency of inspection.

However, the study presented in this chapter differs in several ways from that of Carson et al. (2017). First, Carson et al. (2017) focus only on the potential benefits of the new regulatory system for auditors, whereas this study examines both the costs, in the form of audit fees, and the benefits, measured by a number of audit quality proxies, of the public oversight regime; in doing so, the current thesis provides a more comprehensive study of the consequences of changes to audit regulation. Second, Carson et al. (2017) treat the examination of alternative inspection characteristics only

as supplementary analysis, whereas this study focuses on cross-country variations in the design of new public oversight systems. Third, the inspection characteristics considered by Carson et al. (2017) include direct inspections versus oversight of the inspection process, or a combination of the two, the frequency of inspections, the public disclosure and types of disclosure of inspection results, and the enforcement ability of the new public oversight body. In contrast, this study investigates the membership of oversight bodies, in terms of the participation of non-practitioners versus practitioners, the powers of oversight bodies, i.e. the extent to which oversight responsibility includes the tasks of inspection, investigation, and discipline, and the content of inspection reports, i.e. the provision of overall ratings of the quality of inspected audit firms. Finally, there are also research design differences between the two studies. Rather than using a global sample, as in Carson et al. (2017), this study focuses on the EU. As discussed earlier, the 2006 Directive applies to all EU member states, but at the same time allows significant flexibility in the implementation of specific requirements. Therefore, focusing on EU countries provides an institutional setting in which there is significant cross-country variation in the design of public oversight systems within a common regulatory framework. Overall, the current study and that of Carson et al. (2017) are complementary and contribute to the recent public oversight literature.

As indicated above, this chapter looks at different institutional characteristics of POAs, namely membership, concentration of power and content of inspection reports. It focuses on these characteristics for several reasons. First, the membership and powers of POAs are central to the provisions of the 2006 Directive (2006/43/EC, articles 32

and 35). These provisions have become even more critical in light of the 2014 Directive (2014/56/EU), which amends the previous one, requiring POAs to be governed by non-practitioners only, and to be given greater powers through sole responsibility for the tasks of inspection, investigation and discipline. Second, all the aforementioned characteristics have attracted wide attention in regulatory debates. Specifically, POAs have been criticised for being composed largely of members who lack expertise or experience in auditing (Palmrose 2006; Glover et al. 2009; CFRR 2014), for being granted 'sweeping powers' (Simnett and Smith 2005; Palmrose 2006; Glover et al. 2009), and for providing ineffective feedback (Palmrose 2006; Glover et al. 2009; Lennox and Pittman 2010). Indeed, the issue of monitoring by experienced practitioners rather than by independent non-practitioners has been one of the longest-standing debates in audit regulation (e.g. DeFond 2010). Finally, the choice of the above public oversight design features was also driven by practical considerations and data availability issues.[4]

Audit regulation is an important factor determining audit firms' behaviour and incentives (e.g. DeFond and Zhang 2014). Replacing private self-regulation with independent public oversight is a major regime shift, with potentially significant consequences for audit pricing and audit quality. Most notably, to the extent that national public monitoring bodies have a reputation for being tough regulators, the

[4] Another potentially interesting dimension of the new audit regulation system is whether inspection reports are made publicly available. However, no EU country discloses inspection reports, with the partial exception of Sweden and the UK. In the former, reports are disclosed only for some Big 4 audit firms, while in the latter, reports are disclosed annually, but only for major audits. Similarly, the selection process for oversight board members, as well as the level and sources of funding of the public oversight system are potentially worth investigating, but it proved impossible to obtain good-quality, relevant data for this study.

threat of an inspection under the new regime is likely to present audit firms with an *ex ante* incentive to increase their efforts and their investment in audit resources in anticipation of inspections (DeFond 2010). However, the effects of alternative public oversight design choices on the cost and quality of audits are unclear.

First, the EC has identified significant participation by non-practitioners as an essential characteristic of oversight bodies, with independence being critical to maintaining high audit quality and public confidence (EC 2003b). However, of equal importance in an oversight regime is the ability of board members to understand the practical implications of the audit framework, and to have appropriate knowledge, experience and capability (e.g. Simnett and Smith 2005; CFRR 2014).

Second, according to the EC, 'public oversight must include the exercise of investigative and disciplinary powers' because 'without such powers public oversight would lack public credibility' (EC 2003b). Accordingly, oversight authorities should be responsible not only for performing their own inspections of audit firms, but also for investigating certain cases further, and for imposing penalties if necessary. However, an alternative view is that powers should be separated in order to ensure the transparency and accountability, and thus the credibility, of the oversight body (e.g. Glover et al. 2009).

Third, the content of inspection reports provided by the public oversight body, and particularly the provision of an overall opinion on the quality of the audit firm under review, is also of critical importance. On the one hand, some scholars claim that the absence of such an evaluative summary may impair the informational value of

inspection reports, and in turn the efficiency and effectiveness of the feedback process (Lennox and Pittman 2010). On the other hand, provision of an overall rating may result in misrepresentative information or even 'gaming' behaviour by audit firms, thus limiting the effectiveness of the system's feedback reporting (Christensen et al. 2016).

This study analyses a large international sample of listed firms from 24 EU countries over the period 2005–2013. Using hand-collected information from various sources, the study documents significant heterogeneity in the design of public audit oversight across the EU. In particular, almost 46 per cent of the sample regulatory authorities consist entirely of non-practitioners or provide an overall quality rating in their inspection reports, while 79 per cent of public oversight bodies have concentrated power.

In conducting multivariate regression analyses, this study employs audit fees and three proxies of audit quality, namely clients' absolute and signed abnormal accruals and the likelihood of issuing a qualified audit opinion. The study reports two main results that are new to the literature. First, it documents a significant increase in audit fees subsequent to the adoption of public oversight in countries where all members of the oversight body are non-practitioners, and in countries where the national audit firm regulator has full responsibility for inspection, investigation and discipline. Second, unlike audit fees, the study finds no evidence to suggest that the quality of audit engagements is affected by various features of the public oversight system. A possible explanation for this finding is that many aspects of the new inspection regime are largely process- and compliance-driven, with high costs for limited benefits (Boone et

al. 2015; Christensen et al. 2016). As a result, the cost of audits increases, especially when audit firm oversight is performed by non-practitioners who are potentially more independent and objective, or by regulators with higher enforcement power who are potentially more efficient, but this is not necessarily accompanied by higher-quality audits. Alternatively, the inability to detect any differences in audit quality may be attributable to the potentially limited suitability of commonly-used audit quality proxies for measuring the amount of assurance provided by audit firms (DeFond and Zhang 2014).

Broadly, this study contributes to recent literature on the establishment as well as the costs and benefits of the public oversight regime. Archival research using primarily US data suggests that audit inspections performed by the PCAOB in the US have improved audit quality among small audit firms, but the evidence is less conclusive for large US audit firms.[5] Qualitative, in-depth country case studies reveal interesting dynamics of power between the national regulator, professional accounting bodies and audit firms, as well as the system's dependence on the national socio-political and economic context for successful implementation (e.g. Malsch and Gendron 2011; Caramanis et al. 2015).

This study relates most closely to research by Carson et al. (2017) and Boone et al. (2015). Based on an international sample of firms from 51 countries between 2003 and 2012 and using a difference-in-differences design, Carson et al. (2017) document

[5] For recent reviews of PCAOB research, see Abernathy et al. (2013) and DeFond and Zhang (2014). For subsequent papers, see Gipper et al. (2015) and DeFond and Lennox (2017).

higher audit quality in countries where there are periodic inspections under the public oversight system in the post-inspection period. However, they provide limited evidence that audit quality is associated with various features of the inspection process, such as the type and frequency of inspections. Boone et al. (2015) explore a PCAOB disciplinary order against Deloitte and find a decrease in Deloitte's audit fee growth rate, but no improvement in its audit quality. Contrary to Carson et al. (2017), the current study exploits cross-country heterogeneity in the design of public oversight across the EU and analyses the consequences of different external audit monitoring systems for audit pricing and audit quality. Similarly to Carson et al. (2017) and Boone et al. (2015), it documents an increase in audit costs but no change in audit quality associated with certain public oversight design features.

The current study is believed to be the first to compile three distinct country-level measures of audit regulation design and provide evidence regarding their consequences for audit pricing and quality, as well as addressing long-standing debate on the relative merits of monitoring by experienced practitioners or by independent non-practitioners (e.g. DeFond 2010). In doing so, the study advances understanding of the role of public oversight design choices and provides a starting point for further research. The findings may be of particular relevance to debate on the effectiveness of the current organisational models and inspection reporting processes of national audit firm regulators, including the PCAOB. Finally, the results are potentially important in light of recent developments and new public oversight provisions in the EU (2014/56/EU).

The remainder of this chapter is organised as follows. Section 3.2 provides a brief

overview of the institutional setting and related literature. Section 3.3 elaborates on the research design and describes the data. Section 3.4 presents the empirical findings, and Section 3.5 draws some conclusions.

3.2 Background

3.2.1 Institutional setting

In 2006, the EU issued a new Directive on statutory audit, requiring member states to set up effective systems for the public oversight of auditors and audit firms (2006/43/EC). Prior to this, the audit profession in the EU had been regulated by the 8th EU Council Directive on Company Law, which did not specify any public oversight or external quality assurance requirements. Instead, these matters were left to the discretion of the appropriate authorities in the member states. The 2006 Directive therefore represented a major regime shift, replacing private self-regulation with public oversight in several European countries (FEE 2006).

Under the new 2006 regime, an independent public oversight authority (POA) was established in each EU country, responsible for oversight of the approval and registration of auditors and audit firms, adoption of standards on auditing and related issues, and quality assurance, investigative and disciplinary systems governing audit firms (2006/43/EC, article 32(4)). All auditors and audit firms are subject to public oversight (2006/43/EC, article 32(2)), with audit quality reviews being required at least every six years in general, and every three years for listed firms (2006/43/EC, articles 29 (1h) and 43).

The Directive's provisions stipulate that the scope of an audit inspection should

cover primarily assessment of the design of the audit firm's internal quality control systems, adequate compliance testing of its procedures and, in the case of listed firms, a review of audit files, a significant proportion of which should be selected using a risk-based analysis (2008/362/EC, paras. 17 and 19).[6] On completion, inspection findings should be properly discussed with the inspected audit firm before the inspection report is finalised (2008/362/EC, para. 20). The POA also has the right to perform an investigation (i.e. a second review) if significant issues are raised during the inspection stage or complaints are made by third parties, as well as the right to take disciplinary action against inspected auditors or audit firms. Disciplinary measures may vary from reprimand to monetary penalties or withdrawal of approval (2006/43/EC, article 32(5); FEE, 2006).

This study focuses on three potentially important dimensions of the public oversight system, namely the POA's membership and concentration of power, and the content of its inspection reports. First, it investigates the composition of the POA. The Directive requires that the majority of members of the POA should be non-practitioners who have never been linked with the audit profession or former practitioners who have left the profession.[7] However, member states may allow a minority of practitioners to be involved in governance of the national public oversight system (2006/43/EC, article 32(3)).

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[6] The terms 'inspection' and 'quality assurance reviews' are used interchangeably in the 2006 Directive and related documents.

[7] Article 2(15) of the Directive states that 'non-practitioner' means any natural person who, for at least three years before his or her involvement in the governance of the public oversight system, has not carried out statutory audits, has not held voting rights in an audit firm, has not been a member of the administrative or management body of an audit firm and has not been employed by, or otherwise associated with, an audit firm.

Second, the study assesses the POA's concentration of power based on the extent to which it is responsible for performing the three tasks of inspection, investigation and discipline. As previously discussed, enforcement of quality assurance reviews and disciplinary sanctions generally remains in the hands of the new POA, which is responsible, either directly or through oversight, for work undertaken by national professional bodies. However, member states have the right to delegate some of these functions to other competent authorities (2006/43/EC, article 35).

Third, the study evaluates the content of POA inspection reports, based on their inclusion of overall ratings for inspected audit firms. The Directive does not mandate the provision of an evaluative summary of the overall level of quality of an audit firm, which is left to the discretion of member states. Finally, Article 53 of the 2006 Directive prescribes that the new provisions should be adopted by all member states within two years of the issuance of the Directive.

3.2.2 Theory and related literature

The previous literature acknowledges the role of regulation in shaping the incentives of audit firms (Francis 2011; Knechel et al. 2013; DeFond and Zhang 2014). Audit firm transgressions may have severe consequences for both auditors and audit firms, including the loss of licences to practice for the former, and high regulatory, litigation and reputational costs for the latter (Francis 2011).

Audit fees are the sum of an audit firm's effort cost and expected legal liability costs (e.g. Simunic 1980; Lyon and Maher 2005; Choi et al. 2008). Audit effort cost is a function of the total hours spent on engagements and the cost per hour. Audit quality

is variously defined in the literature (e.g. Knechel et al. 2013; DeFond and Zhang, 2014; DeFond, Lim and Zang, 2016). A widely-used definition by DeAngelo (1981) states that audit quality is 'the market assessed joint probability that a given auditor will both discover a breach in a client's accounting system, and report the breach'. Based on this definition, audit quality is broken down into two components: (1) the likelihood that an auditor will discover a breach in the client's statements and (2) the probability that the auditor will report that breach.

Given the role of regulation in shaping auditors' incentives, the new public oversight system is likely to affect the behaviour of individual auditors and audit firms which, in turn, may affect audit pricing and audit quality. However, alternative design choices may have different effects.

First, the dual models of POA structure, i.e. non-practitioners versus practitioners, represent the classical trade-off between independence and expertise (DeFond 2010, 2012; DeFond and Zhang 2014). On the one hand, if the POA consists entirely of non-practitioners who are generally more objective, low-quality auditors and audit firms are more likely to receive unfavourable inspection reports from 'unfriendly' reviewers who are not their peers (Fogarty 1996; Grumet 2005; Anantharaman 2012). This possibility potentially improves the quality of the reviewing process, leading to an expectation of higher audit fees and enhanced audit quality. Specifically, in order to avoid unfavourable inspection reports by the POA, auditors are likely to spend more time on gathering sufficient evidence and performing additional controls. The audit firm may also employ a higher-quality engagement team, resulting in increased hourly rates.

Therefore, a more independent POA may increase audit effort cost by increasing either the total engagement hours or the hourly rate charged. A more independent POA may also increase expected legal liability costs. As previously discussed, when the POA is more independent or the reviewers are 'unfriendly', audit firms are more likely to receive unfavourable inspection reports, and are thus more likely to face fines and other monetary penalties. Based on the above discussion, audit fees are expected to increase when the POA consists solely of non-practitioners.

Furthermore, a POA consisting of members unconnected with the accounting profession may improve audit quality by affecting either or both of its two components, namely the likelihood that an auditor will discover a breach in the statements, and the probability that the auditor will report that breach. In particular, if POA members are more strong-minded, and 'unfriendly' reviewers are more likely to issue unfavourable reports, audit firms are likely to react by supplying higher-quality auditing services to avoid such reports. In order to do so, audit firms are more likely to put more inputs and expertise into audit engagements, which will increase their competence, thereby enhancing the likelihood of discovering breaches in clients' statements. Moreover, more independent or 'unfriendly' reviewers may be less likely to tolerate audit firms' defects or errors, thus increasing their likelihood of reporting any misstatements.

On the other hand, the participation of non-practitioners in the POA may impair the review process owing to a lack of expertise and experience. In other words, non-practitioners may lack industry expertise, up-to-date technical knowledge and wide experience across different areas (Simnett and Smith 2005; Palmrose 2006; Glover et

al. 2009; DeFond 2010). Auditing is a highly technical, non-routinised activity. For example, experts in financial derivatives may focus on a sub-set of specialist transactions, as it is almost a full-time job to remain up-to-date on the application of standards to such complex transactions. Similarly, IT audit experts must continually update their skills for new technologies. As a result of concerns about the POA's lack of expertise, there may be no effect on either the cost or quality of audits; in fact, audit fees may reduce and audit quality may deteriorate.

In particular, auditor oversight by non-practitioners may decrease their probability of identifying audit deficiencies, thereby reducing their likelihood of issuing an unfavourable report. In such cases, expected legal liability costs and/or audit effort cost will be unaffected (or may even decrease). Furthermore, as the probability of receiving an unfavourable report reduces, auditors' incentives to supply higher-quality audits may be weakened, reducing the probability of detecting or reporting clients' misstatements.

Given the above competing arguments regarding the effects of POA membership on audit pricing and audit quality, the first research question is formulated as follows:

RQ1: How does POA membership affect audit fees and audit quality?

The second design characteristic is the concentration of all three functions of inspection, investigation and discipline in a single oversight authority, either directly or indirectly via collaboration with professional bodies. This may enhance the POA's enforcement powers, thus improving the efficiency of the overall quality assurance system (Gunny and Zhang 2013).

Improved efficiency may increase the possibility of detecting and penalising

auditing deficiencies. Consequently, audit firms will be more likely to receive unfavourable inspection reports, thus increasing expected legal liability costs. At the same time, in order to avoid unfavourable reports, auditors will be likely to allocate more time and expertise (more audit hours and cost per hour), which will increase audit effort cost, and hence audit fees. In addition, audit firms will be more likely to supply higher-quality audits if they know that the oversight system is more efficient in detecting and penalising audit deficiencies. Similarly, audit firms are more likely to report any financial misstatements when faced with a powerful POA. Overall, audit quality is likely to improve.

However, high levels of power concentration may limit the accountability and transparency of the oversight body owing to fewer 'checks and balances' (Campbell and Houghton 2005; Glover et al. 2009), potentially reducing the rigour of audit scrutiny. As a result of this concern, the benefits of an efficient POA may be eroded, and it may have a negative or no impact on audit fees and audit quality. Therefore, the second research question is as follows:

RQ2: How does POA power concentration affect audit fees and audit quality?

Third, providing an overall opinion on the quality of the inspected audit firm may enhance the informational content of the inspection report, enabling prospective clients to distinguish between high- and low-quality audit firms (Lennox and Pittman 2010). Favourable inspection reports may bolster audit firms' reputation and market share, whereas unfavourable reports may increase their reputational losses and litigation

costs.[8] Therefore, owing to concern for their reputation and associated losses, audit firms may devote more time and expertise (more audit hours and cost per hour) to the auditing process in order to obtain favourable inspection reports. As the cost of the audit effort increases, audit fees may be pushed up.

With regard to audit quality, as a result of concern for reputation, disclosure of an overall quality rating in the report may motivate the audit firm to supply high-quality audits in order to gain a favourable report. As a result, more inputs and greater expertise may be devoted to audit engagements, and audit firms' competence is likely to increase. In this case, the likelihood of audit firms discovering clients' misstatements may increase. Also, in order to receive favourable reports and avoid reputational damage and associated losses, audit firms may be less likely to hide clients' misstatements; otherwise, they risk their misconduct being detected by the POA, leading to the issuance of unfavourable reports.

However, owing to the multidimensional nature of audit quality, a single rating measure may provide misleading information. For example, the PCAOB cautions against judging the quality of an audit firm solely on the number of deficiencies identified in its inspection report (Christensen et al. 2016). Related to this, consolidated measures across different inputs (i.e. specific areas of audit work) may motivate 'gaming' behaviour by audit firms (e.g. 'meet or beat' behaviour). In either case, the informational usefulness of an aggregate rating is potentially limited. Therefore, the

[8] This is still the case even if POA inspection reports are not publicly disclosed, because prospective clients are likely to engage in private communications with audit firms regarding their inspections. Moreover, in the event of a favourable inspection outcome, audit firms are likely to provide the reports to potential clients voluntarily.

benefits of disclosing an overall quality rating may be impaired, and it may have a negative or no impact on audit fees and audit quality. Based on the above, the third research question for this study is formulated as follows:

RQ3: How does the disclosure of an overall inspection rating affect audit fees and audit quality?

In summary, if public oversight bodies consisting only of non-practitioners, with concentrated power and the ability to provide an overall rating, are viewed as tougher audit firm regulators, then one would expect to observe higher audit fees and enhanced audit quality as a result of increased audit effort, greater investment in audit resources and higher audit risk. However, since non-practitioners are regarded as less knowledgeable, oversight bodies with concentrated power as less transparent and the provision of a summary score as of limited use, this study does not expect any association between the above public oversight features and audit pricing or quality.

Finally, differences in the design of the new public oversight systems are likely to relate to the costs of audits, but not necessarily to their quality, for at least four reasons. First, POA inspections may focus on compliance and procedures rather than on a holistic assessment of the quality of the audit engagement (Beattie, Fearnley, and Hines 2013; Christensen et al. 2016), or they may even be conducted as 'desk reviews' performed at the POA's offices (Gunny and Zhang 2013; Boone et al. 2015). Second, the new monitoring regime in the EU is potentially time-consuming and costly for audit firms, given that they become involved in discussions of the findings with the inspectors before completion of the inspection report (2008/362/EC, para. 20); this is consistent

with the notion of audit firms' response to inspection risk (Christensen et al. 2016). Third, given the risk-based approach followed during POA inspections, the sample of engagements selected for inspection is unlikely to be representative, and therefore the average quality of audit engagements will be unaffected (DeFond 2010; Gunny and Zhang 2013; Christensen et al. 2016). Fourth, even without more extensive or tougher regulations, audit firms may still have incentives to behave in a professional manner at partner and firm levels owing to reputational and legal concerns. In this case, whether or not the POA is tougher may not be significantly associated with the quality of auditing activities. In line with these arguments, Gunny and Zhang (2013) find that PCAOB inspection outcomes are not associated with audit quality for annually-inspected audit firms, while Boone et al. (2015) document a decrease in Deloitte's audit fees but no change in its audit quality following its public censure by the PCAOB.

3.3 Research design and data

3.3.1 Sample selection

The sample period was from 2005 to 2013.[9] The initial sample included all domiciled listed firms in the 28 EU member states, as well as Iceland and Norway because they belong to the European Economic Area (EEA) and adopt all EU directives.[10] Firms

[9] The post-2005 period was used in order to avoid contamination of the findings by the mandatory adoption of IFRS in the EU in 2005. Specifically, previous literature documents significant changes in financial reporting quality and audit costs associated with the switch from local GAAP to IFRS (for a recent comprehensive review, see De George, Li, and Shivakumar 2016). Accordingly, by focusing on the post-IFRS period, the study holds the financial reporting regime constant; therefore, any observed changes in the outcome variables (e.g. audit fees) are unlikely to be driven by changes in financial reporting standards. An alternative research design might focus only on the period following the establishment of POAs and examine the implications of cross-country heterogeneity in POA design features for audit pricing and audit quality. However, the drawback of this approach is the lack of time-series heterogeneity in the variables of interest, and therefore inability to include country-fixed effects, which is critical given the cross-country nature of the study.

[10] Article 34 of the 2006 Directive specifies that firms are subject to the public oversight requirements of the country in which they are domiciled ('home-country'). Hence, cross-listed/non-domiciled firms were excluded from each country. Worldscope's nationcode items (code WS06027), as well as ISIN codes, were used to determine domicile.

trading on unregulated EU markets (e.g. the Alternative Investment Market in London) were then eliminated, as EU directives do not necessarily apply to these. In line with previous literature (e.g. Michas 2011; Francis, Michas, and Seavey 2013), firms from the financial sector were also excluded from the sample, as their financial information is not comparable with that of other firms.[11] Finally, six countries (Croatia, Cyprus, Estonia, Latvia, Malta and Romania) were deleted from the sample as the required POA country-level data could not be obtained. This left 24 countries that formed the basis of the sample. The final sample included all observations for which the necessary firm-level data were available for regression analysis.

Table 3.1 describes the sample-screening process. The final sample comprised 13,482 observations for the audit fees analysis, 23,487 firm-year observations for the abnormal accruals analysis, and 23,895 observations for the audit opinion analysis. Table 3.2 provides an overview of the sample composition by country (Panel A) and by year (Panel B) for all analyses. As expected, country sample sizes varied significantly. For example, the number of observations was limited for several countries such as Bulgaria, Iceland and Lithuania, whereas France, Germany and the UK dominated the sample in all three analyses.[12] Finally, the sample was evenly spread across the 2005–2013 period.

[11] Firms trading on unregulated markets were identified using information from the stock exchange website of each country.

[12] In the primary empirical analysis, all countries were retained in order to identify significant cross-country variations in public oversight design features. However, as discussed in Section 3.4, the robustness of the findings was assessed, resulting in the exclusion of both small and large countries.

Table 3.1 Sample selection process

	Observations
EU domiciled firms listed on EU stock exchanges, and in Norway and Iceland during 2005-2013	56,380
Delete:	
Total assets, sales or market value of equity zero	(2,193)
Firms with fiscal-year changes	(460)
Firms listed on unregulated markets	(13,980)
Firms from the financial sector	(8,052)
Firms from countries without necessary POA data	(1,557)
Total sample	*30,138*
Firms without necessary firm-level data	(16,656)
Final sample for audit fees analysis	**13,482**
Total sample	*30,138*
Firms without necessary firm-level data	(6,651)
Final sample for abnormal accruals analysis	**23,487**
Total sample	*30,138*
Firms without necessary firm-level data	(6,243)
Final sample for audit opinion analysis	**23,895**

Table 3.2 Sample composition

Panel A: By country

Country	Audit Fees		Abnormal Accruals		Audit Opinion	
	N	%	N	%	N	%
Austria	182	1.35	436	1.86	449	1.88
Belgium	376	2.79	703	2.99	721	3.02
Bulgaria	2	0.01	201	0.86	136	0.57
Czech Republic	19	0.14	81	0.34	85	0.36
Denmark	545	4.04	839	3.57	841	3.52
Finland	655	4.86	1,023	4.36	993	4.16
France	1,954	14.49	3,352	14.27	3,322	13.90
Germany	1,993	14.78	3,162	13.46	3,277	13.71
Greece	40	0.30	1,287	5.48	1,367	5.72
Hungary	14	0.10	65	0.28	64	0.27
Iceland	36	0.27	59	0.25	64	0.27
Ireland	268	1.99	299	1.27	310	1.30
Italy	877	6.50	1,730	7.37	1,627	6.81
Lithuania	1	0.01	158	0.67	191	0.80
Luxembourg	40	0.30	110	0.47	114	0.48
Netherlands	421	3.12	883	3.76	874	3.66
Norway	344	2.55	542	2.31	568	2.38
Poland	422	3.13	1,593	6.78	1,679	7.03
Portugal	160	1.19	354	1.51	352	1.47
Slovakia	7	0.05	44	0.19	50	0.21
Slovenia	19	0.14	67	0.29	71	0.30
Spain	564	4.18	659	2.81	725	3.03
Sweden	1,210	8.97	2,156	9.18	2,272	9.51
UK	3,333	24.72	3,684	15.69	3,743	15.66
Total	13,482	100	23,487	100	23,895	100

Panel B: By year

Year	Audit Fees		Abnormal Accruals		Audit Opinion	
	N	%	N	%	N	%
2005	1,207	8.95	2,409	10.26	2,743	11.48
2006	1,322	9.81	2,685	11.43	2,785	11.66
2007	1,401	10.39	2,815	11.99	2,819	11.80
2008	1,490	11.05	2,793	11.89	2,809	11.76
2009	1,555	11.53	2,743	11.68	2,805	11.74
2010	1,684	12.49	2,696	11.49	2,743	11.48
2011	1,759	13.05	2,599	11.07	2,644	11.07
2012	1,602	11.88	2,449	10.43	2,406	10.07
2013	1,462	10.84	2,298	9.78	2,141	8.96
Total	13,482	100	23,487	100	23,895	100

Notes: The sample period is 2005–2013. The sample comprises 24 countries.

3.3.2 Public oversight authority variables

POA variables were constructed for the sample countries as follows. *MEMBERSHIP* refers to POA composition, and in particular to firms in countries where all POA board members are non-practitioners. *POWER* refers to the power concentration of the POA, and more specifically to firms in countries where the POA is responsible for all three functions of inspection, investigation and discipline. *RATING* refers to the content of inspection reports, and in particular to firms in countries where inspection reports provide overall ratings of the audit firms under review. Each POA variable is a dummy indicator that equals 1 for all firm-year observations ending on or after the national law of public oversight became effective, and 0 otherwise. Therefore, the variables of interest capture changes in audit fees or audit quality for firms in countries with a POA that consists only of non-practitioners (*MEMBERSHIP*) or has concentrated power (*POWER*) or provides a summary inspection score (*RATING*) following the adoption of public oversight, relative to corresponding changes for firms in countries without the above POA designs. All variable definitions are provided in Appendix 1.

To construct the test variables, information was hand-collected from a variety of sources. In particular, data for *MEMBERSHIP* were drawn primarily from the profiles of member states provided by the website of the International Forum of Independent Audit Regulators (IFIAR), a well-known international body whose members are audit oversight authorities from around the world (IFIAR 2013). Since these data were sourced directly from the oversight bodies, the reliability of the data was considered to be high. In addition, in cases of ambiguity, the IFIAR data were supplemented or cross-

checked using the biographies of POA members available through LinkedIn and national POAs' websites or by contacting the POAs directly. For *POWER*, the primary sources of data were the IFIAR's (2013) member profiles and an EC report containing information provided by member states on competent oversight authorities (EC 2010). With regard to *RATING*, POAs' annual reports available on their websites were manually checked, and the national POAs were contacted directly in the event that the annual reports were uninformative.[13] Finally, a combination of the above sources was used to identify national laws that incorporate the 2006 Directive and the years in which they became effective. Appendix 2 reports the data sources for construction of the POA variables.

Appendix 3 describes the public oversight systems across the sample countries, and Table 3.3 Panel A presents the coding of the POA variables, based on information reported in Appendix 3, as well as the country-level institutional and economic control variables used in the study. There is wide variation in the external audit regulation systems across the sample countries studied. First, 11 countries (45.8 per cent of sample), including Germany, Greece, Netherlands and the UK, have a POA consisting entirely of non-practitioners.

[13] IFIAR's website provides only the most recent profiles of member states (see https://www.ifiar.org). At the time of the initial data collection, 2013 profiles were available; subsequently, the Czech Republic and Slovenia were included using their first available profiles for 2014. Therefore, it was assumed that the POA variables remained constant following the implementation of the 2006 Directive. Arguably, audit oversight characteristics, like most institutional arrangements, tend to be static and experience only minor changes over long periods of time. To provide some related evidence, the national POAs were contacted again to request information regarding their rating systems over the sample period. None of the national regulators in the dataset had made any changes to their rating processes following the establishment of their POAs. Member profiles are available on request from the authors. All correspondence with POAs, with a few exceptions, is also available on request from the authors.

Table 3.3 Country-level descriptive statistics

Panel A: POA, economic and institutional characteristics by country

Country	***MEMBERSHIP***	***POWER***	***RATING***	***GDP***	***GDP_PER_CAP***	***HHI***	***RULE***
Austria	1	0	1	391	46,714.30	0.481	1.859
Belgium	1	0	1	479	44,194.04	0.327	1.333
Bulgaria	0	1	1	46.80	6,295.53	0.404	-0.127
Czech Republic	0	1	0	197	18,899.37	0.778	0.922
Denmark	1	0	0	318	57,539.58	0.743	1.928
Finland	0	1	0	251	46,918.22	0.374	1.943
France	0	0	0	2,640	40,889.12	0.451	1.440
Germany	1	1	0	3,430	41,989.77	0.348	1.667
Greece	1	1	0	290	25,987.96	0.570	0.658
Hungary	0	1	1	131	13,103.20	0.544	0.779
Iceland	0	1	1	15.90	50,755.63	0.532	1.778
Ireland	0	1	1	236	52,992.16	0.293	1.711
Italy	1	1	0	2,140	36,229.70	0.528	0.393
Lithuania	0	1	1	38.70	12,400.88	0.111	0.711
Luxembourg	1	1	0	51.20	101,892.60	0.461	1.786
Netherlands	1	1	1	824	49,822.62	0.771	1.789
Norway	1	1	0	422	86,841.32	0.615	1.929
Poland	0	1	0	452	11,799.26	0.710	0.576
Portugal	0	1	1	231	21,940.38	0.415	1.035
Slovakia	0	1	1	87.20	16,174.65	0.361	0.506
Slovenia	1	1	0	47.00	23,114.48	0.658	0.959
Spain	0	1	0	1,410	30,797.48	0.754	1.111
Sweden	0	1	0	491	52,650.43	0.401	1.908

UK	1	0	1	2,590	41,680.91	0.459	1.683
Mean	*0.458*	*0.792*	*0.458*	*717.00*	*38,817.65*	*0.504*	*1.262*

Panel B: Correlations between POA and other country-level variables (n=24)

	Variable	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1	*MEMBERSHIP*	-	-0.352*	-0.175	0.344*	0.429**	0.211	0.260
2	*POWER*	-0.352*	-	-0.146	-0.393*	-0.230	0.067	-0.289
3	*RATING*	-0.175	-0.146	-	-0.332	-0.187	-0.381*	-0.139
4	*GDP*	0.305	-0.374*	-0.313	-	0.218	0.103	0.224
5	*GDP_PER_CAP*	0.477**	-0.167	-0.262	0.110	-	0.018	0.877***
6	*HHI*	0.208	0.036	-0.419**	0.161	0.043	-	0.029
7	*RULE*	0.297	-0.335	-0.116	0.224	0.785***	0.034	-

Notes: Panel A presents the design features of the POA and other economic and institutional variables for the sample countries. See Appendix 1 for definitions of all variables. Each POA variable equals 1 for all observations ending on or after the national law of public oversight became effective, and 0 otherwise. *GDP* is reported in billion US$. The values of all variables are mean values across all sample years for each country. Panel B reports Pearson (Spearman) correlations across the bottom (top) of the table. ***, ** and * denote significance at the 1%, 5% and 10% levels, respectively (two-tailed test). All variables are averaged within each country over all sample years prior to calculating the correlations. Correlations are based on the natural log of *GDP*.

Second, in most sample countries (79.2 per cent of the sample), the POA has a high concentration of power, being responsible for all three functions of inspection, investigation and discipline. In contrast, Austria, Belgium, Denmark, France and the UK delegate some of these functions to separate bodies. Third, inspection reports provide overall opinions on the level of audit firms' quality in 11 of the sample countries (45.8 per cent of sample). The rating scales vary from country to country, such as A, B, C and D in Ireland, and 'satisfactory', 'satisfactory with comments' and 'unsatisfactory' in Austria. Finally, a few countries had adopted the public oversight system before the issuance of the 2006 Directive – for example, Germany and the UK had introduced new audit regulation regimes in 2005 and 2004 respectively – but the vast majority of sample countries implemented public oversight at some point during the post-2006 period. The considerable cross-country and time-series heterogeneity in the adoption of public oversight systems (see Appendix 3) was explored through empirical tests.

Table 3.3 Panel B reports pairwise Pearson and Spearman country-level correlations (n=24) between the POA and the other country-level control variables used in the regression analyses. The following observations are noteworthy. First, there are no high correlations between the POA variables, suggesting that the three dimensions do not cluster. Second, the POA variables and the country controls employed in the study do not display systematically high correlations. Thus, the POA variables appear to be distinct measures of a country's audit oversight system, separate from more

general features of market size, wealth, economic growth and legal environment.[14] Third, as expected, rule of law and per capita GDP are significantly positively correlated.

3.3.3 Empirical models

Audit fees

To examine the relationship between audit costs and public oversight design choices, the following audit fee model was employed, in line with previous studies (e.g. Simunic 1980; Choi et al. 2009; Kim et al. 2012; Carcello and Li 2013; Boone et al. 2015):

$$\begin{aligned} AUDFEE = {} & \beta_0 + \beta_1 MEMBERSHIP + \beta_2 POWER + \beta_3 RATING \\ & + \sum_{j=1}^{15} \gamma_j \text{FIRM-SPECIFIC CONTROLS} \\ & + \sum_{k=1}^{3} \delta_k \text{ COUNTRY-SPECIFIC CONTROLS} + \varepsilon \end{aligned} \quad (1)$$

AUDFEE is measured as the log of audit fees in thousands of US$. In line with previous international studies of audit fees (e.g. Choi et al. 2008, 2009; Kim et al. 2012), Worldscope data were used. It must be noted that Worldscope audit fee data may also include non-audit fees paid to audit firms, so the extent to which this creates noise in the dependent variable may reduce the power of the tests.

Coefficient estimates β_1 to β_3 capture the effects on audit fees of heterogeneity in audit firm supervision across the EU. The model includes 15 firm-specific controls: firm size (*SIZE*), profitability (*LOSS* and *ROA*), leverage (*LEVERAGE*), book-to-market ratio (*BM*), cash flow from operations (*CFO*), busy audit period (*BUSY*),

[14] A few correlations between the POA variables and country-level factors (e.g. *MEMBERSHIP* and *GDP_PER_CAP)* are statistically significant; however, all correlations are less than 0.50.

whether the firm is in a litigious industry (*LITIGIOUS*), the likelihood of the firm receiving a qualified opinion (*OPINION*), liquidity (*LIQUIDITY*), whether the audit firm is a Big 4 audit firm (*BIG4*), the number of business segments *(NBS)*, the number of geographical segments *(NGS)*, the proportion of foreign sales *(FORSALES)* and the intensity of receivables and inventory *(INVREC*). All variables are time-variant, with the exception of *BIG4*.[15]

With regard to cross-country differences that may affect audit fees, and in line with previous international research (Choi et al. 2008, 2009; Numan and Willekens 2012), the model includes the Herfindahl index (*HHI*) to control for the impact of audit market concentration, as well as gross domestic product (*GDP*) and gross domestic product per capita (*GDP_PER_CAP*) to capture differences in living standards and therefore the reservation compensation for audit firms. All country-level factors are time-variant. Data on *GDP* and *GDP_PER_CAP* were obtained from the World Bank, and the data required to compute *HHI* were collected from Worldscope.

As the test variables are time-variant, capturing both changes in the public oversight regime over time and differences between different types of regime in the cross-section, the models (i.e. audit fees and audit quality) include country-fixed effects to control for unobserved country-level characteristics that may affect the results for the POA variables. Focusing only on country-years with a public oversight regime in place would result in time-invariant POA variables, and thus would not allow the inclusion of country-fixed effects, which is critical given the cross-country nature of

[15] Worldscope provides only the current audit firm(s) employed by a company.

the study. In other words, any documented empirical findings might be attributable to unobserved country-level characteristics potentially associated with the study's outcome variables.

Moreover, several previous related studies adopt the same research design, employing pre- and post-settings (e.g. Carson et al. 2017; Lamoreaux 2016; Aobdia and Schroff 2017). For example, Carson et al. (2017) generate a dummy variable (Inspection) to reflect the change in the inspection system; they then interact this indicator with the inspection characteristics of interest (e.g. frequency of inspections). Similarly, Lamoreaux (2016) generates an indicator (POST) to reflect the post-PCAOB inspection period, and interacts it with several variables that capture the national regulator presence (e.g. whether the regulator is an IFIAR member). Finally, Aobdia and Schroff (2017) also interact their test variable (REPORT, equal to 1 if an inspection report is released by the PCAOB in the post-PCAOB period) with some local regulator characteristics (e.g. IFIAR membership). It is important to note that all the above studies employ country-fixed effects.

Audit quality

Audit quality is not directly observable, and is a multifaceted construct that cannot be represented by a single variable (Christensen et al. 2016). Therefore, to provide a comprehensive understanding of the effect of public oversight design on audit quality, the study employs three different proxies with potential complementarities (for a recent and comprehensive review of alternative audit quality proxies, see DeFond and Zhang 2014). First, it uses two commonly adopted statistical properties of the accruals

component of audited earnings, consistent with audit quality being a continuous construct. These properties are absolute abnormal accruals and signed abnormal accruals. The likelihood of the audit firm issuing a qualified audit opinion is also used, which is a direct outcome of the audit process. Audit quality is higher if clients have lower accruals and are more likely to receive a qualified audit opinion.

The following model is used to test the association between abnormal accruals and POA design characteristics:

$$\begin{aligned} AWCA = {} & \beta_0 + \beta_1\ MEMBERSHIP + \beta_2\ POWER + \beta_3\ RATING \\ & + \sum_{j=1}^{11} \gamma_j \text{FIRM-SPECIFIC CONTROLS} \\ & + \sum_{k=1}^{3} \delta_k\ \ \textit{COUNTRY-SPECIFIC CONTROLS} + \varepsilon \end{aligned} \quad (2)$$

DeFond and Park's (2001) abnormal working capital accruals (*AWCA*) measure is used, which has been adopted in previous audit research (e.g. Carey and Simnett 2006; Francis and Wang 2008). *AWCA* is the difference between actual and expected working capital, where the historical relationship between past working capital and sales captures expected working capital. *AWCA* is calculated as $AWCA = WC_t - [(WC_{t-1}/S_{t-1})*S_t]$, where WC = (current assets – cash and short-term investments) – (current liabilities – short term debt), and S = sales.

This measure is adopted for three main reasons. First, it avoids the estimation problems associated with more sophisticated models (Jones 1991), which are potentially less reliable for calculating abnormal accruals with international data owing to the small number of industry observations per country (Wysocki 2004; Francis and Wang 2008; Peek et al. 2013). Second, this measure provides a more powerful test than

tests using total accruals (DeFond and Park 2001). Third, previous research suggests that managers have most discretion over working capital accruals (Becker et al. 1998; Ashbaugh, LaFond, and Mayhew 2003). Both absolute *AWCA* and signed *AWCA* are employed as the dependent variables in Equation (2). Coefficient estimates β_1 to β_3 capture the effects of heterogeneity in public oversight systems across the EU on abnormal working capital accruals.

Following previous research (e.g. Michas 2011; Dao, Raghunandan, and Rama 2012; Lennox and Li 2012; Carcello and Li 2013; Boone et al. 2015), in addition to *SIZE*, *LOSS*, *LEVERAGE*, *BM*, *CFO*, *BUSY*, *LITIGIOUS* and *BIG4*, the model also controls for lagged accruals (*LAGGED_ACCRUALS*), sales growth (*SALES_GROWTH*) and firm age (*AGE*), as well as for cross-country differences that may affect audit quality. Specifically, in line with previous international studies (Francis and Wang 2008; Michas 2011; Francis et al. 2013), the model includes *GDP* and *GDP_PER_CAP* to control for country size and wealth respectively, and *RULE* to capture the impact of a country's legal enforcement. Data on *RULE* were obtained from Kaufmann, Kraay, and Mastruzzi (2009).

The third proxy for audit quality is the likelihood of the audit firm issuing a qualified audit opinion (Michas 2011; Lennox and Li 2012; Carcello and Li 2013). In this case, the following logistic regression model is employed:

$$\begin{aligned} \text{OPINION} = {} & \beta_0 + \beta_1 \text{ MEMBERSHIP} + \beta_2 \text{ POWER} + \beta_3 \text{ RATING} \\ & + \sum_{j=1}^{11} \gamma_j \text{FIRM-SPECIFIC CONTROLS} \\ & + \sum_{k=1}^{3} \delta_k \text{ COUNTRY-SPECIFIC CONTROLS} + \varepsilon \end{aligned} \quad (3)$$

OPINION is a dummy variable coded as 1 if the firm issues a qualified audit opinion, and 0 otherwise.[16] Coefficient estimates β_1 to β_3 reflect the effects of variation in public audit oversight across the EU on the propensity of an audit firm to issue a qualified audit opinion. Firm-specific controls include *SIZE, ROA, LOSS, LEVERAGE, BM, CFO, AGE, BUSY, BIG4, LITIGIOUS* and *LIQUIDITY*. Country-level factors are the same as in Equation (2).

All models include industry year-fixed effects and country-fixed effects to control for any industry time trends and unobservable country-specific effects respectively. Empirical specifications are estimated with White standard errors clustered at the country-year level, as this is the level at which the variables of interest are calculated.[17] Continuous variables are winsorised at the 1st and 99th percentiles.

Table 3.4 describes the firm-level variables used in the regression analyses. Panels A, B and C report the distributional properties of all variables in the audit fee, abnormal accruals and audit opinion samples respectively.

[16] The Worldscope database does not code the different types of qualified opinions issued. Therefore, similarly to previous studies (e.g. Michas 2011), it is impossible to ascertain whether a company's qualified opinion is due to going concern problems or less important issues such as accounting method changes. Also, the relatively low frequency of qualified opinions may reduce the statistical power of tests using large samples of firms (DeFond and Zhang 2014).

[17] Alternatively, the model replaces industry year-fixed effects with separate industry indicators and a binary variable that equals 1 for all firm-year observations ending on or after the national law of public oversight became effective, and 0 otherwise; the main inferences remain qualitatively unchanged. Also, one-way clustering at country-year level is employed (i.e. the clustering unit is every year in a given country). Given the relatively short period (9 year clusters) and the number of country clusters, which may be as low as 17 (depending on the estimated model), two-way clustering by country and by year may be subject to the 'small cluster' problem, leading to biased standard errors (Petersen 2009, p.460).

Table 3.4 Firm-level descriptive statistics

Panel A: Audit fees sample (N=13,482)

Variable	Mean	Median	Std. Dev
AUDFEE_RAW	3118.212	709.101	7614.199
AUDFEE	6.710	6.564	1.565
SIZE	13.479	13.257	2.026
LOSS	0.218	0.000	0.413
LEVERAGE	0.153	0.124	0.145
BM	0.751	0.571	0.689
CFO	0.073	0.076	0.098
BIG4	0.874	1.000	0.332
BUSY	0.782	1.000	0.413
LITIGIOUS	0.234	0.000	0.423
LIQUIDITY	1.660	1.376	1.114
ROA	0.023	0.039	0.117
NBS	1.241	1.386	0.525
NGS	1.449	1.386	0.509
FORSALES	0.471	0.480	0.321
INVREC	0.336	0.326	0.184
OPINION	0.008	0.000	0.087

Panel B: Abnormal accruals sample (N=23,487)

Variable	Mean	Median	Std. Dev
|AWCA|	0.062	0.033	0.090
AWCA	-0.001	-0.001	0.097
SIZE	12.867	12.667	2.109
LOSS	0.256	0.000	0.436
LEVERAGE	0.146	0.110	0.147
BM	0.820	0.602	0.859
CFO	0.059	0.067	0.113
BIG4	0.782	1.000	0.413
BUSY	0.824	1.000	0.381
LITIGIOUS	0.228	0.000	0.420
AGE	2.452	2.565	0.821
LAGGED_ACCRUALS	-0.042	-0.040	0.102
SALES_GROWTH	0.100	0.055	0.347

Panel C: Audit opinion sample (N=23,895)

Variable	Mean	Median	Std. Dev
OPINION	0.009	0.000	0.093
SIZE	12.815	12.630	2.133
LOSS	0.256	0.000	0.436
LEVERAGE	0.145	0.108	0.147
BM	0.811	0.595	0.828
CFO	0.056	0.067	0.119
BIG4	0.781	1.000	0.414
BUSY	0.822	1.000	0.382
LITIGIOUS	0.229	0.000	0.420
AGE	2.425	2.485	0.845
LIQUIDITY	1.745	1.372	1.395
ROA	0.008	0.034	0.145

Panel D: Dependent variables by country

Country	***AUDFEE***		***|AWCA|***		***AWCA***		***OPINION***	
	Mean	**N**	**Mean**	**N**	**Mean**	**N**	**Mean**	**N**
Austria	6.082	182	0.049	436	0.002	436	0.000	449
Belgium	6.450	376	0.055	703	-0.002	703	0.025	721
Bulgaria	3.814	2	0.111	201	0.000	201	0.052	136
Czech Republic	6.477	19	0.061	81	-0.002	81	0.000	85
Denmark	6.561	545	0.066	839	-0.002	839	0.002	841
Finland	6.512	655	0.055	1,023	-0.003	1,023	0.000	993
France	7.053	1,954	0.050	3,352	-0.002	3,352	0.002	3,322
Germany	6.561	1,993	0.074	3,162	0.001	3,162	0.002	3,277
Greece	5.554	40	0.063	1,287	-0.006	1,287	0.007	1,367
Hungary	7.131	14	0.054	65	-0.005	65	0.016	64
Iceland	7.189	36	0.061	59	-0.007	59	0.000	64
Ireland	6.661	268	0.060	299	0.003	299	0.090	310
Italy	6.358	877	0.050	1,730	-0.008	1,730	0.009	1,627
Lithuania	4.006	1	0.079	158	0.009	158	0.115	191
Luxembourg	8.066	40	0.058	110	0.002	110	0.009	114
Netherlands	7.538	421	0.061	883	-0.007	883	0.001	874
Norway	6.801	344	0.086	542	0.008	542	0.000	568
Poland	4.635	422	0.095	1,593	-0.001	1,593	0.013	1,679

Portugal	6.665	160	0.057	354	-0.004	354	0.040	352
Slovakia	5.659	7	0.076	44	0.024	44	0.000	50
Slovenia	5.543	19	0.037	67	0.006	67	0.000	71
Spain	6.871	564	0.058	659	-0.009	659	0.008	725
Sweden	6.568	1,210	0.073	2,156	0.003	2,156	0.001	2,272
UK	7.000	3,333	0.045	3,684	0.001	3,684	0.014	3,743

Notes: Panels A, B and C describe all firm-level variables used in the regression analysis. The sample period is 2005–2013. The sample consists of 24 countries. See Appendix 1 for definitions of all variables. All continuous variables are winsorised at the 1st and 99th percentiles. Panel D reports the mean values and number of observations by dependent variables and country.

The mean values of |*AWCA*| and *AWCA* are 0.062 and -0.001 respectively. Also, 0.8 per cent of firms issued a qualified opinion, whereas the average for *AUDFEE* is 6.710. Panel D provides the mean values of all dependent variables by country. The mean value of *OPINION* is 0 in seven sample countries, so these countries are excluded when estimating Equation (3).[18] Overall, these data, as well as untabulated correlations, do not suggest any unusual behaviour or multicollinearity issues.[19]

3.4 Empirical findings

This section presents empirical analysis of the results. It examines the average effect of alternative public oversight systems on audit fees, and investigates the consequences of different public oversight design features for audit quality.

POA design and audit fees

Table 3.5 reports the results of analysis of audit fees. As shown in Model 1, the coefficients for *MEMBERSHIP* and *POWER* are positive, at 0.285 and 0.197 respectively, and are significant at the five per cent level. These findings reveal that, following the establishment of the POA, audit fees increase in countries where audit firm supervision is performed by non-practitioners only, and in countries where quality assurance and related tasks are concentrated in a single oversight body. In contrast, the coefficient estimate of *RATING* is insignificant.

[18] This is because the country indicators perfectly predict the dependent dummy variable.
[19] The only exception is *ROA*, which is positively correlated with *CFO* and negatively correlated with *LOSS*. The empirical findings remain unchanged after dropping *ROA* from the audit opinion and audit fees analyses.

Table 3.5: Effect of POA design on audit fees

Independent variables	**(1)**	**(2)**
POA		
MEMBERSHIP	0.285** *(2.22)*	0.285*** *(4.10)*
POWER	0.197** *(2.57)*	0.197*** *(3.86)*
RATING	-0.144 *(-1.19)*	-0.144 *(-1.57)*
Firm-level		
SIZE	0.647*** *(90.69)*	0.647*** *(76.91)*
LOSS	0.113*** *(5.83)*	0.113*** *(4.40)*
LEVERAGE	-0.047 *(-0.71)*	-0.047 *(-0.51)*
BM	-0.116*** *(-8.46)*	-0.116*** *(-6.66)*
CFO	0.002 *(0.03)*	0.002 *(0.02)*
BIG4	0.167*** *(6.20)*	0.167*** *(4.20)*
BUSY	0.095*** *(4.06)*	0.095** *(2.86)*
LITIGIOUS	-0.015 *(-0.76)*	-0.015 *(-0.47)*
LIQUIDITY	-0.054*** *(-7.96)*	-0.054*** *(-5.08)*
ROA	-0.685*** *(-6.88)*	-0.685*** *(-6.75)*
NBS	0.080*** *(5.33)*	0.080*** *(4.28)*
NGS	0.121*** *(6.57)*	0.121*** *(5.41)*
FORSALES	0.345*** *(10.74)*	0.345*** *(8.78)*
INVREC	0.364*** *(6.20)*	0.364*** *(6.20)*
OPINION	0.053 *(0.57)*	0.053 *(0.59)*
Country-level		
GDP	1.209*** *(3.62)*	1.209*** *(3.81)*
GDP_PER_CAP	-0.000** *(-2.77)*	-0.000** *(-2.73)*
HHI	0.015 *(0.28)*	0.015 *(0.36)*
Intercept	-36.366*** *(-3.90)*	-36.366*** *(-4.11)*
No. of observations	13,482	13,482
No. of countries	24	24
Adj. R^2/Pseudo R^2	0.783	0.783

Notes: This table reports the coefficients from estimating the audit fees model. The sample period is 2005–2013. The sample consists of 24 countries. For definitions of variables, see Appendix 1. Each POA variable equals 1 for all observations ending on or after the national law of public oversight became effective, and 0 otherwise. All continuous variables are winsorised at the 1st and 99th percentiles. *T-statistics* based on country-year clusters (Model 1) or firm clusters (Model 2) and heteroskedasticity-corrected standard errors are reported in parentheses. All models include country- and industry year-fixed effects. ***, ** and * denote significance at the 1%, 5% and 10% levels, respectively (two-tailed test).

With regard to control variables, the audit fee model behaves in line with expectations, with a high R-squared of 0.783. In Model 2, the baseline specification is re-estimated after adopting firm-clustered standard errors, and the findings remain unchanged.

Table 3.6: Robustness analysis

Independent variables	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**
	Cross-sectional POA variables	**Ratio of practitioners**	**Exclude small countries**	**Exclude France**	**Exclude Germany**	**Exclude UK**	**Exclude U.S. cross-listed firms**	**Alternative POWER**
MEMBERSHIP	-0.274***	0.266	0.283**	0.291**	0.293**	0.260**	0.284**	0.199**
	(-5.86)	*(1.44)*	*(2.20)*	*(2.28)*	*(2.32)*	*(2.03)*	*(2.28)*	*(2.04)*
POWER	-0.146***	-	0.203**	0.200**	0.209**	0.142*	0.189**	0.330**
	(-3.01)	-	*(2.60)*	*(2.57)*	*(2.77)*	*(1.87)*	*(2.57)*	*(2.79)*
RATING	0.269***	-	-0.142	-0.144	-0.146	-0.152	-0.131	-0.025
	(5.53)	-	*(-1.16)*	*(-1.19)*	*(-1.22)*	*(-1.28)*	*(-1.20)*	*(-0.23)*
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. of observations	12,515	13,482	13,420	11,528	11,489	10,149	11,885	13,482
No. of countries	24	24	18	23	23	23	24	24
Adj. R^2	0.776	0.782	0.730	0.720	0.740	0.754	0.716	0.783

Table 3.6 reports sensitivity tests based on Model 1 of Table 3.5. In Model 1, rather than reflecting both changes in the public oversight regime over time and differences between different types of regime in the cross-section, the POA variables are defined to include only cross-sectional differences for country-years with a public oversight regime in place. In Model 2, *MEMBERSHIP* is defined as the ratio of accounting professionals/practitioners to total board members. Model 3 excludes countries with fewer than 20 observations. Models 4, 5 and 6 exclude the three largest countries in turn. Model 7 excludes firms cross-listed on a US stock exchange. Model 8 employs an alternative definition of *POWER*, as a dummy variable for firms in countries where the POA has sole responsibility for all three functions of inspection, investigation and disciplinary. The sample period is 2005–2013. The sample consists of 24 countries. See Appendix 1 for definitions of all variables. Each POA variable equals 1 for all observations ending on or after the national law of public oversight became effective, and 0 otherwise. All continuous variables are winsorised at the 1st and 99th percentiles. *T-statistics* based on country-year clusters and heteroskedasticity-corrected standard errors are reported in parentheses. All models include country- and industry-year fixed effects. ***, ** and * denote significance at the 1%, 5% and 10% levels, respectively (two-tailed test).

The robustness of the results reported in baseline Model 1, shown in Table 3.5, were assessed through a series of additional tests. For the sake of brevity, the table presents results only for the POA binary variables, but the full set of controls described earlier is included in all models. The results are tabulated in Table 3.6. Overall, the primary findings are robust to the following series of research design choices.

First, all empirical models are re-estimated only for country-years with a public oversight regime in place, and therefore without including country-fixed effects. As shown in Table 3.6, in the case of audit fees, MEMBERSHIP and POWER are both negative, whereas RATING is positive. All estimates are significant (see Model 1).

Second, an alternative definition of MEMBERSHIP is adopted, whereby MEMBERSHIP is measured by the ratio of the number of accounting professionals/practitioners to total board members.[20] As reported in Model 2 of Table 3.6, the estimate of MEMBERSHIP is still positive but insignificant, suggesting that the mere existence of professionals is more important than the weighting of professional representation on the board.

Third, as discussed previously, the number of observations by country varies significantly, from very small (e.g. Bulgaria, Lithuania and Slovakia) to very large (e.g. France and UK), which may unduly influence the regression results. Accordingly, the audit fees specification is re-estimated after dropping all countries with fewer than 20 observations (see Model 3), and then after excluding the three largest countries

[20] The data used to form the alternative definition of MEMBERSHIP are based mainly on IFIAR (2013, 2014). For Iceland, which is not a member of IFIAR, MEMBERSHIP is based on online sources. The data are available on request.

alternately (see Models 4, 5 and 6). The analysis in Table 3.6 shows that the baseline results are qualitatively identical to those reported earlier.

Fourth, a recent stream of studies documents the effects on audit quality of PCAOB'S international inspections of non-US audit firms with US-listed foreign audit clients (Lamoreaux 2013; Shroff 2015; Krishnan, Krishnan, and Song, 2017). In this study, to provide evidence that the findings are not driven by US cross-listed firms subject to PCAOB inspections, the empirical analysis is repeated after excluding these firms. The primary results remain qualitatively unchanged (see Model 7).

Finally, as indicated in Appendix 3, while the majority of national audit firm regulators have concentrated power, in several cases they have joint responsibility with other organisations, such as professional accounting bodies. In such cases, the POA's power may be diluted. Therefore, the analysis is sharpened by employing an alternative definition of the *POWER* variable, as an indicator of firms in countries where the POA has sole (rather than joint) responsibility for all three functions of inspection, investigation and discipline. In this case, seven countries (29.2 per cent of the sample), namely Greece, Italy, Luxembourg, Netherlands, Norway, Spain and Sweden, have an audit firm regulator that is solely responsible for quality assurance and related tasks. The empirical findings shown in Model 8 reveal that the primary inferences persist: the estimate of *POWER* is 0.330 and significant at the five per cent level.

Taken together, the results shown in Tables 3.5 and 3.6 indicate significant increases in audit costs following the adoption of the public oversight system, when: a) audit firm oversight is performed only by non-practitioners who are potentially more

independent and objective, or b) a single audit firm regulator is in charge of the entire quality assurance process and is therefore potentially more effective.

POA design and audit quality

Table 3.7 reports the results of analysis of audit quality.

Table 3.7: Effect of POA design on audit quality

Independent variables	**(1)**	**(2)**	**(3)**
	|AWCA|	***AWCA***	***OPINION***
POA			
MEMBERSHIP	0.006 *(1.49)*	-0.001 *(-0.27)*	-0.539 *(-1.20)*
POWER	-0.003 *(-0.82)*	-0.002 *(-0.66)*	-0.350 *(-1.11)*
RATING	0.004 *(0.85)*	-0.006 *(-1.34)*	-0.048 *(-0.13)*
Firm-level			
SIZE	-0.007*** *(-18.19)*	0.001** *(2.84)*	-0.047 *(-0.81)*
LOSS	0.013*** *(8.20)*	-0.050*** *(-20.23)*	0.318 *(1.48)*
LEVERAGE	-0.026*** *(-5.03)*	-0.006 *(-1.18)*	-0.769 *(-1.16)*
BM	-0.011*** *(-11.39)*	0.003** *(3.16)*	0.030 *(0.36)*
CFO	-0.100*** *(-9.19)*	-0.274*** *(-21.92)*	-2.449*** *(-3.37)*
BIG4	-0.011*** *(-6.53)*	0.001 *(0.75)*	-0.008 *(-0.04)*
BUSY	-0.002 *(-1.13)*	-0.002 *(-1.19)*	-0.382 *(-1.23)*
LITIGIOUS	-0.001 *(-0.92)*	0.002 *(1.01)*	0.372** *(2.03)*
AGE	-0.003*** *(-3.99)*	-0.003*** *(-3.54)*	0.289** (2.56)
LAGGED_ACCRUALS	0.002 *(0.24)*	-0.109*** *(-10.51)*	-
SALES_GROWTH	0.088*** *(23.17)*	-0.004 *(-0.71)*	-
LIQUIDITY	-	-	-0.116 *(-1.61)*
ROA	-	-	-1.275** *(-2.10)*
Country-level			
GDP	-0.027 *(-1.41)*	-0.057* *(-1.78)*	-5.037** *(-2.75)*
GDP_PER_CAP	0.000 *(1.18)*	0.000 *(1.54)*	0.000 *(0.20)*
RULE	0.008 *(0.62)*	-0.018 *(-1.56)*	1.731 *(1.27)*
Intercept	0.901 *(1.57)*	1.644 *(1.88)*	137.401*** *(43.91)*
No. of observations	23,487	23,487	19,742
No. of countries	24	24	17
Adj. R^2/Pseudo R^2	0.233	0.097	0.211

Notes: This table reports the coefficients from estimating the audit quality models. The sample period is 2005-2013. The sample consists of 24 countries. See Appendix 1 for definitions of all variables. Each POA variable equals 1 for all observations ending on or after the national law of public oversight became effective, and 0 otherwise. All continuous variables are winsorised at the 1st and 99th percentiles. *T-statistics* (*z*-statistics) based on country-year clusters and heteroskedasticity-corrected standard errors are reported in parentheses. All models include country- and industry year-fixed effects. ***, ** and * denote significance at the 1%, 5% and 10% levels, respectively (two-tailed test).

The analysis begins with abnormal accruals in Models 1 and 2 (absolute and signed values respectively). As reported, none of the variables of interest is statistically significant. In all models, firm-level control variables are generally significant and in a direction consistent with previous research. For example, Model 1 shows that larger and older firms with higher leverage, book-to-market ratios and operating cash flows, and Big 4 audit firms have lower levels of absolute abnormal accruals, whereas less profitable firms with higher sales growth display higher accruals. Model 3 presents regression analysis of the dependent variable, *OPINION*.

The results mirror those reported in Models 1 and 2: all POA variables are insignificant. As with the audit fees analysis, additional robustness tests were performed, and untabulated findings reveal that the main inferences remain unchanged. [21] Collectively, these results provide no evidence to suggest that the adoption of alternative public oversight systems is associated with different levels of audit quality. The only exceptions is the test using cross-sectional POA variables. For the cross-sectional POA variables, MEMBERSHIP and POWER are positive and significant when the outcome variable is |AWCA| but insignificant for the signed AWCA and OPINION outcome variables. Overall, these empirical findings differ from the baseline results, but should be viewed very cautiously given the inability to control for unobserved country-level with country-fixed effects.

[21] Specifically, the sample uses cross-sectional POA variables, alternative definition of MEMBERSHIP, excludes five countries with fewer than 100 observations and the three largest countries (Germany, France and the UK), as well as US cross-listed firms, and an alternative *POWER* definition is employed. Also, abnormal accruals and audit opinion specifications are re-estimated after clustering standard errors at the firm level. An attempt was also made to adjust the logit estimator for analysis of OPINION to allow for low frequency of positive values, using relogit in STATA. However, this STATA estimator does not allow for inclusion of factor variables and time-series operators (e.g. industry-year fixed effects) as well as some other options (e.g. 'robust' and 'cluster'), so this proved infeasible.

Collectively, these results generally provide no evidence to suggest that the adoption of alternative public oversight systems is associated with different levels of audit quality.

3.5 Conclusions

This study examines the implications for audit pricing and audit quality of different ways of designing public audit oversight, with a focus on POA membership and powers, and the content of inspection reports. Based on a hand-collected dataset covering 24 EU countries, the study documents wide variations in external audit regulation systems across the EU. Significant increases in audit fees are observed when the national audit firm regulator's membership consists solely of non-practitioners, or when the entire quality assurance process is performed by a single oversight authority. Thus, the findings suggest that audit costs increase when audit firm oversight is carried out by independent and potentially more objective POA members, or by oversight authorities with greater enforcement power and potentially more efficient processes. However, no differences in audit quality are detected associated with alternative public oversight design choices. This result is consistent with the view expressed in previous literature that public oversight may be compliance-driven rather than focusing on a holistic assessment of audit quality (Boone et al. 2015). Alternatively, the research methodologies used in extant archival studies may not capture the quality of audit engagements undertaken by audit firms.

Overall, this study is the first to generate evidence regarding the implications of alternative external audit regulation designs for audit pricing and quality, and addresses

a long-standing debate over the relative merits of monitoring by experienced practitioners or by independent non-practitioners. It thus provides a starting point for further research, as well as potentially useful insights for policy makers and national audit firm regulators.

Chapter 4: Consequences of Inspection Ratings for Audit Pricing, Audit Firm Tenure and Audit Quality – Evidence from the UK

4.1 Introduction

Having examined public oversight practices at a pan-European level in Chapter 3, this chapter focuses specifically on the UK. The study presented in this chapter measures the potential costs and benefits of providing overall quality ratings for audit firms under inspection. The costs include the effect on audit fees and the likelihood of clients switching audit firms, while the benefits refer to the quality of assurance provided by audit firms.

The 2006 Directive requires each EU member state to set up a system for public oversight of the audit profession, which has replaced previous self-regulation (i.e. peer-review) systems in several European countries. In the UK, public inspection of the audit profession is a central feature of the Financial Reporting Council (FRC). In December 2008, the FRC began to publicly disclose inspection reports for major individual audit firms that have UK clients.[22] These reports contain information about the audit firm under review, the period over which the inspection was conducted, the fiscal year end covered and, more importantly, an overall quality rating for each audit firm's individual audit engagements under review.

The study's focus on inspection ratings is motivated by Lennox and Pittman (2010),

[22] According to the FRC (2016), these clients are 'related to FTSE 100, FTSE 250, other listed and other major public interest entities'.

who argue that clients do not perceive a PCAOB inspection as a signal of audit quality, whereas a favourable (or unfavourable) peer-review report may have a positive (or negative) impact on an audit firm's market share. They further demonstrate that the signalling role of peer-review reports stems mainly from information that PCAOB inspectors do not publicly disclose, such as overall quality ratings. As the FRC provides summary scores for quality in its inspection reports, this study examines the FRC's ratings and measures their costs and benefits for audit firms.

The consequences for audit pricing of providing an overall quality rating are unclear. On the one hand, more deficient ratings may damage an audit firm's reputation, which may induce it to reduce its price in order to retain clients (Acito et al. 2013; Boone et al. 2015). On the other hand, audit firms may have to expend greater effort and resources to adjust their audit procedures in order to avoid fines or other monetary penalties (e.g. Acito et al. 2013; DeFond and Lennox 2017). In an oligopolistic audit market, since the audit fee is cost-driven, the audit firm will pass on the incremental cost to its clients, which will increase audit fees (Lyon and Maher 2005; Boone et al. 2015). This may be particularly the case for Big 4 audit firms, where clients may have little or no choice of alternative auditors. As a result, Big 4 audit firms may be more likely to pass on increased costs via fees. In terms of audit quality, the independence of FRC staff from the audit profession, and the FRC's diversity of funding sources suggest that its inspections are credible,[23] and may help distinguish between high and low audit

[23] As shown in Appendix 3, FRC board members are all non-practitioners who are independent of the audit profession. Based on information from IFIAR (2013), the FRC has a variety of funding sources, including the business community, the accountancy profession and the UK government.

quality. However, for similar reasons to the audit firm switching analysis, the FRC rating may not relate to audit quality due to concerns about the FRC staff's expertise and experience, inspection approach and inspection focus. Overall, the consequences of FRC inspections for audit fees, audit turnover and audit quality are open to question.

To examine the consequences of FRC inspection ratings, first, the impact of ratings on audit fees is measured. Using a large sample of UK-listed clients for the period 2008–2016, a significant increase in audit fees is found when the audit firm has a higher proportion of engagements with lower ratings. Specifically, a 10 per cent increase in deficient ratings will generate a 5.33 per cent audit fee premium. Furthermore, this increase in audit fees is more concentrated among clients with Big 4 audit firms. Next, the impact of inspection ratings on audit firm switching is investigated, proxied by the likelihood of switching audit firm between years. Unlike audit fees, there is no evidence to suggest that ratings may affect clients' likelihood of switching audit firms. This indicates that FRC ratings are not perceived by audit committees as a signal of audit quality, and thus do not affect their audit firm appointment decisions. Finally, the association between FRC ratings and audit quality is examined, proxied by abnormal accruals, total accruals and the likelihood of issuing a qualified audit opinion. Consistent with the result for audit firm switching, no significant relationship is found between FRC ratings and audit quality, which further demonstrates that rating results may not signal audit quality.

This study contributes to the literature by examining the cost and benefits of public oversight regimes, and is most closely related to studies by Gunny and Zhang (2013)

and Acito et al. (2013). In classifying PCAOB inspection reports into three types based on the severity and number of deficiencies disclosed, Gunny and Zhang (2013) find that PCAOB inspection outcomes are associated with lower audit quality when the reports are seriously deficient. However, this result applies only to triennially-inspected audit firms, whereas in the case of annually-inspected audit firms, they find no relationship. According to Gunny and Zhang (2013), a report is 'clean' if no deficiencies are identified, 'deficient' if one or more audit deficiencies are found, and 'seriously deficient' if the deficiency relates to a 'failure to identify a departure from GAAP' and/or a particular deficiency results in a 'restatement' of the financial statements. Acito et al. (2013) investigate the association between PCAOB inspection findings and changes in audit fees and audit firm switching for clients of Big 4 audit firms. Using the relative exposure to deficient auditing, they find that this exposure is positively related to audit firm changes, but is unrelated to changes in audit fees.[24] In addition to these two studies, other studies (e.g. Offermanns 2011) also attempt to link PCAOB inspection results with changes in audit firm behaviour.[25] However, as PCAOB inspection reports do not provide overall quality ratings, all of the above studies carry out their own classifications of reports to differentiate the results. However, this

[24] According to Acito et al. (2013), relative exposure to deficient auditing is measured as the difference between deficient auditing exposure with the current audit firm and adjusted audit firm deficiency exposure that the client would face with other audit firms. Specifically, by matching a keyword list (based on deficiencies identified in PCAOB inspection reports) with the number of times these keywords relate to each standard identified in the client's 10-K filing, audit firm deficiency exposure is calculated as the client's standardised keyword count for an accounting standard multiplied by an indicator variable which is equal to one if the PCAOB identifies a client's audit firm as having a deficiency relating to that standard.

[25] Offermanns (2011) tests the impact of PCAOB inspections on residual audit fees. Similarly to Gunny and Zhang (2013), he classifies audit firms into two groups, namely audit firms with detected deficiencies and those with no deficiencies from the inspection process. He finds that inspections lead to an increase in audit fees for clients with deficient audit firms.

subjective classification system may potentially decrease the credibility of the results. Furthermore, rather than applying a continuous variable, using a dummy variable to distinguish between 'clean' and 'deficient' reports may not reflect subtle changes in audit quality, given that the quality of internal control, the audit firm's processes and the quality of audit engagement may lie between these two extreme cases. Finally, all of these studies are based in the US, and it is unclear whether the results are applicable to other institutional settings. The only exception to the above is Cheon et al.'s (2016) study of a Korean setting. They find that both quality control system deficiencies and audit engagement deficiencies discussed in the inspection report are credible in distinguishing between lower- and higher-quality firms. However, similarly to the aforementioned US studies, the Korean oversight authority does not give overall quality ratings for audit engagement deficiencies. Moreover, using the natural logarithm of the number of audit engagement deficiencies to classify inspection reports may be inappropriate because larger audit firms normally have more engagements being inspected, which may result in more deficiencies being disclosed. Therefore, a higher logarithm value in this case may simply indicate that the audit firm has had more engagements inspected, rather than lower audit quality.

The study presented in this chapter makes several contributions. First, rather than classifying reports based on the deficiencies disclosed, this study is the first to use quality ratings drawn directly from FRC inspection reports. In doing so, it employs a more objective measure of inspection findings. For example, as the PCAOB does not provide ratings in its inspection reports, Gunny and Zhang's (2013) approach to

defining reports as ‘clean’, ‘deficient’ or ‘seriously deficient’ requires the exercise of some judgment, and is therefore potentially subjective. Classifying audit failures into deficiencies or serious deficiencies presumes a good understanding of several related factors, including the materiality of the failure. Arguably, the audit regulator (e.g. the FRC) is in a better position to assess the severity of audit failures and classify them accordingly. In summary, this study complements Gunny and Zhang’s (2013) work by employing a more refined and potentially more informative audit quality rating.

Moreover, rather than using an indicator variable (i.e. ‘clean’ or ‘deficient’), this study uses a continuous variable, measured as the proportion of engagements with a low rating out of the total engagements inspected. This research design complements the strengths and weaknesses of previous research design choices because it is able to both reflect subtle changes in audit quality and avoid the aforementioned problems associated with using logarithmic values.

Second, this research focuses on the UK and extends the literature on the consequences of audit inspections for audit pricing and audit quality outside the US. Finally, this study contributes to debate on the quality of the content of audit firm inspection reports and the value of the audit firm inspection process. There is mixed evidence on whether audit firm inspection reports affect the supply and demand of audit services (e.g. Lennox and Pittman 2010; Acito 2013; Gunny and Zhang 2013). This study contributes by providing evidence that inspection ratings may increase audit costs, but may not be valuable in distinguishing audit quality, thus having no effect on audit committees’ audit firm appointment decisions. This finding advances understanding of

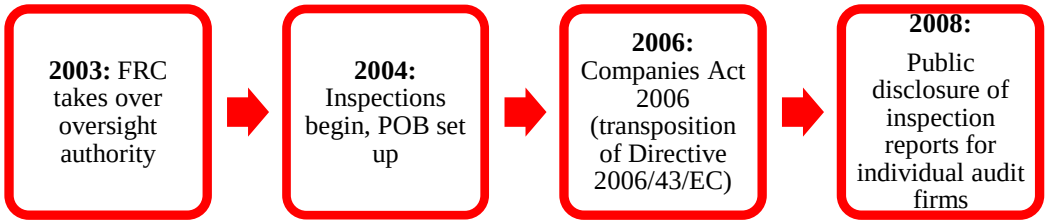
the effectiveness of the audit inspection regime and provides auditing regulators with guidance on policy making.

4.2 Background

4.2.1 Institutional setting

In 2003, the FRC became the POA for the audit profession in the UK (IFIAR 2013). In 2004, following the government's review of audit regulation, a Professional Oversight Board (POB) was set up within the FRC to inspect the audit profession (FRC 2012). In 2006, with the release of Directive 2006/43/EC by the EC, public oversight was introduced across Europe, and the UK began the transposition process by drafting the Companies Act 2006, which became effective in 2008 (UK Parliament 2006). Unlike the PCAOB, which discloses inspection reports for each individual audit firm being inspected, the FRC was already publicly disclosing annual public reports with principal findings relating to major audit firms in the UK. Following this, in December 2008, the FRC began to publicly disclose inspection reports for major individual audit firms that audit listed and other major public interest UK entities (FRC 2016).[26]

Figure 4.1: Development of public oversight in UK



Source: UK Parliament 2006; FRC 2012, 2016; IFIAR 2013

Inspection reports for individual audit firms are disclosed on the FRC's website.

[26] Checks with FRC staff confirmed that Alternative Investment Market (AIM) companies can only be selected if they meet the threshold (e.g. a market capitalisation of £100 million) set by the FRC. Only a minority of AIM companies meet this threshold, so most are not within the scope of FRC inspection.

However, before completing the inspection, the audit firm being inspected has a right to provide a response letter to the FRC, which is also attached to the final inspection report (FRC 2016). Moreover, during each inspection, the FRC must have constant contact with the audit firm being inspected, since it has to examine many different dimensions of the firm. Therefore, the audit firm knows the inspection result long before the publication date and even before the inspection is completed, and clients may also find out the results in advance by checking with the audit firm.

Individual inspection reports contain a lot of information, including the name of the audit firm being reviewed, the period over which the inspection was conducted, the fiscal year covered, areas of focus in the inspection, principal findings, and the audit firm's response to the inspection results (FRC 2016). For each inspection, using a risk-based approach, the FRC assesses both the quality of individual audits and the quality of the audit firm's control procedures (FRC 2016). In the inspection report, the FRC issues a summary score for the quality of each audit engagement reviewed, rating it as 'Good' (category 1), 'Limited improvements required' (category 2A), 'Improvements required' (category 2B) or 'Significant improvements required' (category 3) (FRC 2016).[27] The rating scales indicate audit quality from high to low, and are defined as follows:

> *An audit is assessed as good where we identified no areas for improvement of sufficient significance to include in our formal report. Limited improvements required indicates that we had only limited concerns to report. Improvements*

[27] Neither the client's name nor the audit partner's name for each audit engagement are provided in the report.

required indicates that more substantive improvements were needed in relation to one or more issues reported. An audit is assessed as requiring significant improvements if we have significant concerns in relation to the sufficiency or quality of audit evidence, the appropriateness of key audit judgments or other matters identified (FRC 2016).

4.2.2 Inspection reports and their outcomes

Table 4.1: Number of engagements inspected by audit firm (2009–2016)

Audit Firm (short title)	**Number of audit engagements inspected**	**Weight (%)**
Deloitte LLP (Deloitte)	125	19.65
Ernst & Young LLP (E&Y)	111	17.45
KPMG LLP (KPMG)	126	19.81
PricewaterhouseCoopers LLP (PwC)	141	22.17
Baker Tilly UK Audit LLP (Baker Tilly)	17	2.67
BDO LLP (BDO)	36	5.66
Crowe Clark Whitehill LLP (Crowe Clark)	15	2.36
Grant Thornton UK LLP (Grant Thornton)	42	6.60
Mazars LLP (Mazars)	9	1.42
PKF (UK) LLP (PKF)	14	2.21
Total	**636**	**100**

Table 4.1 shows the number of engagements inspected by the FRC for each individual audit firm from 2009 to 2016. In total, 636 audit engagements were inspected during this period. Among these, 79.08 per cent of engagements related to Big 4 audit firms, with PwC having the highest number of engagements inspected (22.17 per cent).

Table 4.2 shows the total number of audit engagements for all audit firms, sorted by rating and publication year.

Table 4.2: Engagements by rating and publication year

Publication Year	Good (c1)		Limited improvements required (c2A)		Improvements required (c2B)		Significant improvements required (c3)		Total	
	N	%	N	%	N	%	N	%	N	%
2009	0	0.00	30	42.86	32	45.71	8	11.43	70	100
2010	0	0.00	37	55.22	23	34.33	7	10.45	67	100
2011	0	0.00	37	50.68	28	38.36	8	10.96	73	100
2012	0	0.00	36	48.00	33	44.00	6	8.00	75	100
2013	0	0.00	46	65.71	16	22.86	8	11.43	70	100
2014	0	0.00	47	63.38	17	23.29	9	13.33	73	100
2015	0	0.00	69	66.35	25	24.04	10	9.62	104	100
2016	0	0.00	80	76.92	22	21.15	2	1.92	104	100
Total	**0**	**0**	**382**	**59.97**	**196**	**30.77**	**59**	**9.26**	**636**	**100**

Note: % shows the proportion of the number of engagements for each rating of total engagements reviewed each year.

It is evident that the number of engagements for 'Limited improvements required' grew steadily from 2009 to 2016, increasing from 42.86 per cent in 2009 to more than 76.92 per cent in 2016. This was different for engagements with 'Improvements required', which fluctuated between 2009 and 2016, reaching their highest in 2012 with a weighting of 44 per cent and their lowest in 2013 with a weighting of around 22 per cent. The proportion of engagements rated as 'Significant improvements required' remained stable, except in 2016 when it dropped to about two per cent. Finally, the table also shows that no audit engagements were rated 'Good' in any inspection year. Overall, between 2009 and 2016, engagements rated as 'Limited improvements required' had the highest weighting (59.97 per cent in total), while those rated as 'Significant improvements required' had the lowest (9.26 per cent in total).

In addition to sorting ratings by inspection year, Table 4.3 shows the total number of audit engagements inspected by the FRC sorted by rating and individual audit firm for all years. As this table shows, the audit firm with the highest number of engagements

rated ‘Limited improvements required’ was Deloitte, with 72 per cent of its total.

Table 4.3: Engagements by rating and audit firm

Audit Firm	Good (c1)		Limited Improvements Required (c2A)		Improvements Required (c2B)		Significant Improvements Required (c3)		Total	
	N	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**
Deloitte	0	0.00	90	72.00	28	22.40	7	5.60	125	100
E&Y	0	0.00	64	57.66	37	33.33	10	9.01	111	100
KPMG	0	0.00	77	61.11	38	30.16	11	8.73	126	100
PWC	0	0.00	94	66.67	39	27.66	8	5.67	141	100
Baker Tilly	0	0.00	3	17.65	9	52.94	5	29.41	17	100
BDO	0	0.00	18	50.00	14	38.89	4	11.11	36	100
Crowe Clark	0	0.00	6	40.00	8	53.33	1	6.67	15	100
Grant Thornton	0	0.00	17	40.48	17	40.48	8	19.05	42	100
Mazars	0	0.00	5	55.56	2	22.22	2	22.22	9	100
PKF	0	0.00	8	57.14	4	28.57	2	14.29	14	100
Total	**0**	**0.00**	**382**	**59.97**	**196**	**30.77**	**59**	**9.26**	**636**	**100**

Note: % shows the proportion of the number of engagements for each rating of total engagements reviewed for each audit firm.

The audit firm with the lowest number and weighting of ‘Limited improvements required’ ratings was Baker Tilly, with less than 20 per cent of engagements. For ‘Improvements required’, Crowe Clark had the highest weighting, with more than half of it engagements. For ‘Significant improvements required’, Baker Tilly had the largest weighting, with almost 30 per cent of audit engagements falling within this rating. Moreover, Deloitte and PwC performed best in this respect, as only around five per cent of their engagements were rated as ‘Significant improvements required’.

Table 4.4 Fiscal year ends covered in inspection reports

Publication Year	Deloitte	E&Y	KPMG	PwC	BDO	Grant Thornton	Mazars	Crowe Clark	Baker Tilly	PKF
2009	06/2007-06/2008	09/2007-12/2007	06/2007-03/2008	03/2007-05/2008	03/2008-12/2008	12/2007-03/2008		03/2008-06/2008	12/2007-01/2008	
2010	06/2008-05/2009	06/2008-05/2009	06/2008-01/2009	08/2008-06/2009						12/2008-06/2009
2011	09/2009-01/2010	06/2009-05/2010	09/2009-02/2010	07/2009-04/2010	12/2009-03/2010	03/2009-03/2010				
2012	08/2010-03/2011	10/2010-03/2011	06/2010-04/2011	06/2010-03/2011			08/2010-03/2011	03/2010-03/2011	03/2009-12/2010	02/2010-12/2010
2013	06/2011-03/2012	12/2011-04/2012	06/2011-03/2012	09/2011-03/2012	04/2011-03/2012	03/2011-03/2012				
2014	06/2012-03/2013	12/2011-03/2013	06/2012-03/2013	04/2012-04/2013					03/2012-12/2012	
2015	06/2013-04/2014	09/2013-06/2014	06/2013-05/2014	06/2013-06/2014	12/2012-12/2013	03/2013-03/2014	03/2013-12/2013	03/2013-09/2013		
2016	06/2014-04/2015	06/2014-04/2015	06/2014-04/2015	06/2014-04/2015	06/2014-04/2015	06/2014-04/2015				

Table 4.4 presents data for the fiscal year ends covered in each inspection, listed by audit firm and publication year.[28] Owing to the time lag, the fiscal year ends covered in the inspection report normally refer to the previous fiscal year.[29] Big 4 audit firms are inspected annually, so inspections cover almost all fiscal years,[30] whereas the other audit firms are inspected less frequently, so some fiscal years are not covered by FRC inspections.

4.2.3 Theory and related literature

Several previous studies (e.g. Anantharaman 2007; DeFond 2010; Gramling et al. 2011; Carcello et al. 2011; Gunny and Zhang 2013) seek to measure the consequences of audit regulation. Regulation intervention may affect the behaviour of both audit firms and clients, and thus the supply of and demand for audit services (DeFond and Zhang 2014). More specifically, a rating which is the result of an inspection process is likely to affect the incentives of audit firms and clients, which may in turn affect audit pricing, the likelihood of audit firm switching and audit quality.

Audit fees

Based on previous literature, audit fees are the sum of the costs of an audit firm's effort and expected legal liabilities (e.g. Simunic 1980; Lyon and Maher 2005; Choi et al. 2008). If the audit firm is found to have deficiencies, its reputation may be damaged,

[28] In most cases, the FRC gives fiscal year ends rounded to a month. Hence, when forming test variables, the last day of the month is used as the lower and upper limit. For example, when the fiscal year end is between 06/2008 and 06/2009, it is treated as 30/06/2008-30/06/2009. The results are robust to using the first day of the month as the lower and upper limit.

[29] According to the FRC (2014), one December 2011 year-end engagement for E&Y was reviewed during the 2013/14 inspection, and thus belongs to the previous inspection period; when forming test variables, this engagement was excluded and the fiscal end covered for year 2014 was redefined as 04/2012-03/2013. The result is robust if all E&Y's firm-year observations for 2014 are dropped.

[30] For the most recent-inspection reports, the fiscal year ends are not provided in annual reports; the FRC confirmed that the periods were similar to the previous inspection report, generally from June 2014 to April 2015.

which may result in decreased demand for its audit services (e.g. Hilary and Lennox 2005; Abbot et al. 2012). In this case, the audit firm may reduce its prices to retain clients (Acito et al. 2013; Boone et al. 2015).

However, the audit firm may also increase its audit fees. If more of its engagements receive a deficient rating, it will be required to expend greater effort and expertise (more audit hours and higher cost per hour) in adjusting its audit procedures (e.g. Acito et al. 2013; DeFond and Lennox 2017); otherwise, it may face fines and other monetary penalties (e.g. Carcello et al. 2011; Osma et al. 2014; Gipper et al. 2015). At the same time, the risk of fines and other monetary penalties is likely to increase the cost of legal liabilities, so an audit firm with more deficient ratings in inspection reports may increase either or both cost components (i.e. audit effort cost and legal liability cost). In an oligopolistic audit market such as the UK, since the audit fee is cost-driven, the audit firm may pass on the incremental cost to its clients, which may increase audit fees (Lyon and Maher 2005; Boone et al. 2015). Moreover, in selecting Big 4 audit firms, clients have little or no choice of alternative firms, so the threat of switching is less credible. Thus, the Big 4 audit firms may be more able to pass on increased costs through fees. Overall, the general impact of the FRC rating on audit fees remains undetermined, so the following first research question is formulated:

RQ1: How does an inspection report with more deficient engagements affect audit fees?

Audit firm switching

Several previous studies have examined the consequences of audit firm changes following a specific event (e.g. Barton 2005; Weber, Willenborg, and Zhang 2008; Wieczynska 2016). An audit firm switch usually represents a change in audit quality (DeFond and Zhang 2014), and clients have incentives to increase the credibility of their financial reports by appointing high-quality audit firms (Teoh and Wong 1993). In the context of this study, an audit firm with more deficient ratings may incur reputational damage, which may shrink demand for its audit services, since clients may respond by switching to higher-quality audit firms (e.g. Weber et al. 2008; Lennox and Pittman 2010; Skinner and Srinivasan 2012). However, the following considerations may potentially mitigate the risk of switching following an unfavourable inspection report.

First, the classical trade-off between the FRC's expertise and independence (e.g. Palmrose 2006; Groff and Hocevar 2009; DeFond 2010; Carson et al. 2017; Gunny and Zhang 2013) may moderate any increased risk of audit firm switching. As shown in Appendix 3, the FRC's board members are all non-practitioners. Compared with previous peer-review systems, the FRC's greater independence from the audit profession may contribute to more objective and judicial inspections (Hilary and Lennox 2005; Carcello et al. 2011). However, inadequate expertise and professionalism of the oversight staff may give rise to questions as to the credibility and efficiency of inspections (DeFond 2010). Some may argue that although FRC inspectors come from public practice and have some audit experience, this experience may quickly become

outdated and fall behind current knowledge (Glover et al. 2009). As clients are aware of this, audit committees may perceive FRC inspection findings to have low credibility, such that they will not alter their switching decisions.

Second, the inspection approach may also alleviate the risk of audit firm switching. According to the FRC (2015), its reviews are selected on a risk basis using a risk model, and each review covers only selected aspects of the relevant audit. Since the audit firms in the sample for this study are large firms, and their client bases are also large, there is little likelihood that the selected engagements will be representative of the audit firm's overall client base (e.g. DeFond 2010; Gunny and Zhang 2013; Acito et al. 2013). As clients understand this,[31] their audit committees may pay less attention to the inspection results.

Third, the focus of the inspection may lessen the likelihood of audit firm switching. According to Boone et al. (2015), inspectors may focus more on compliance, documentation and substantiation of audit inputs and processes, rather than on audit outcomes, and this may not be viewed by audit committees as being significantly related to audit quality. For example, in Deloitte's 2016 inspection report, the FRC showed that one audit engagement had carried out insufficient audit procedures to prove that transactions had been correctly classified; however, despite presenting this minor issue on procedural compliance and adequacy, the FRC did not indicate its overall impact on the final audit outcome or audit quality (e.g. specific impact on revenue, earnings or final audit opinion), so the audit committee in this context may not have

[31] The risk inspection approach is disclosed in the inspection report, so clients are aware of it.

found this information useful. As Beattie et al. (2013) suggest, the new regime is largely process- and compliance-driven, with high costs for limited benefit. Consistent with this point, other studies (e.g. Glover et al. 2009; DeFond and Lennox 2011; Acito et al. 2013) also argue that deficiencies disclosed in inspection reports are trivial and insignificant, and thus audit committees may not find the reports informative.

Overall, the impact of FRC ratings on audit firm switching is unclear. Thus, the second research question is stated as follows:

RQ2: How does an inspection report with more deficient engagements affect audit firm switching?

Audit quality

Having analysed the consequences of FRC ratings for audit fees and audit firm switching, next, the relationship between FRC ratings and audit quality is investigated, namely whether inspection ratings reflect underlying audit quality. According to DeAngelo (1981), audit quality is 'the market-assessed joint probability that a given auditor will both discover a breach in a client's accounting system, and report the breach'. However, as audit quality is not directly observable, the market must use proxies for it (Abbott et al. 2012). The FRC's inspection ratings provide possible representations of audit quality to distinguish between high- and low-quality audits.

On the one hand, FRC ratings are expected to be fair and credible; thus, an audit firm with more deficiencies disclosed in the inspection report will signify lower audit quality. This is supported by the following considerations. First, the FRC's greater independence from the audit profession ensures the objectivity of the review process,

thereby improving the credibility of the inspection report (Hilary and Lennox 2005; Carcello et al. 2011; Gunny and Zhang 2013). Second, the FRC devotes significant resources to the inspection activity and has access to sufficient funding for its activities. According to the FRC's annual reports (2008–2015), its actual expenditure on audit inspections has doubled, increasing from £2.1 million in 2008 to £4.3 million in 2015. Moreover, it has various funding sources for its operations. According to IFIAR (2013), the FRC's core operating costs in relation to accounting are funded by the business community, the accountancy profession and the UK government. This range of funding sources ensures that it has sufficient funding for its daily work, such that the quality of its work can be guaranteed.

Nevertheless, for similar reasons to the audit firm switching analysis, the FRC's ratings may not relate to audit quality, owing to concerns about its staff expertise and experience, inspection approach and inspection focus. Thus, the association between audit quality and FRC ratings remains open to question, and the third research question for this study is formulated as follows:

RQ3: How does an inspection report with more deficient engagements relate to audit quality?

4.3 Research design and data

4.3.1 Empirical models

Audit fees

Regression analysis is used to measure the impact of the latest available FRC rating (rating in year *t*-1) on current audit fees (audit fees in year *t*). Based on previous

literature (e.g. Simunic 1980; Choi et al. 2008), the audit fee model is as follows:

$$\text{Audit Fees}_t = \beta_0 + \beta_1 \text{PROC3}_{t-1} + \Sigma\beta_j \text{Firm-Specific Controls}_{j,t} + \Sigma\beta_k \text{Fixed Effects} + \varepsilon_t \quad (1)$$

As discussed in Section 4.2.1, there is a time lag between the publication year and the fiscal year to which the inspection rating relates. Therefore, it should be noted that the timing of the inspection rating (i.e. *t*-1) used in equation 1 refers to the fiscal year. *AUDFEE* is measured as the log of audit fees in thousands of British pounds (GBP). β_1 is the coefficient of the test variable and measures the impact of the rating in year *t*-1 on audit fees in year *t*. *PROC3* is constructed as the proportion of engagements rated 'Significant improvements required' (Category 3) over total engagements reviewed for each audit firm for a specific year. Following previous studies (Simunic 1980; Lyon and Maher 2005; Gul 2006; Carcello and Li 2013), a number of client-specific variables are included, which are predicted to be associated with audit fees (*SIZE, LEVERAGE, ROA, LOSS, BM, CFO, BIG4, BUSY, OPINION*, *LIQUIDITY*), as well as the number of business segments (*NBS*), the number of geographical segments (*NGS*), the proportion of foreign sales (*FORSALES*) and the intensity of receivables and inventory (*INVREC*). Definitions of all variables are provided in Appendix 4.

Audit firm switching

Logistic regression is used to measure the impact of the latest available rating on the propensity of clients to switch audit firms. Following previous literature (Weber et al. 2008; Boone et al. 2015), the model is as follows:

$$\text{Switching}_t = \beta_0 + \beta_1 \text{PROC3}_{t-1} + \Sigma\beta_j \text{Firm-Specific Controls}_{j,t} + \Sigma\beta_k \text{Fixed Effects} + \varepsilon_t \quad (2)$$

As previously discussed, there is a time lag between the publication year and the fiscal year to which the inspection rating relates, so the timing of the inspection rating (i.e. *t*-1) used in equation 2 refers to the fiscal year. *SWITCH* is equal to 1 if a client changed audit firm between the previous (*t*-1) and current (*t*) year, and 0 otherwise. β_1 is the coefficient of the test variable, measured as in equation (1). A number of client-specific variables predicted to be associated with clients' switching decisions are also included (*SIZE, LEVERAGE, ROA, LOSS, OPINION*), as well as percentage change in size (*%SIZE*), percentage change in leverage (*%LEVERAGE*) and the intensity of receivables and inventory (*INVREC*).

Audit quality

Audit quality is measured in four main ways: a) absolute abnormal accruals, b) signed abnormal accruals, c) total accruals, and d) the likelihood of the audit firm issuing a qualified audit opinion.

$$\text{Audit Quality}_t = \beta_0 + \beta_1 \text{PROC3}_t + \Sigma\beta_j \text{Firm-Specific Controls}_{j,t} + \Sigma\beta_k \text{Fixed Effects} + \varepsilon_t \quad (3)$$

As for the previous models, the time lag between the publication year and the fiscal year to which the inspection rating relates is accounted for by using the fiscal year as the year of the inspection rating. Rather than using a lagged rating, as in the audit fees and audit firm switching analyses, current audit quality proxies (i.e. audit quality in year *t*) are matched with the current rating (i.e. rating in year *t*) to observe whether inspection report ratings are useful in determining underlying audit quality.

For the dependent variables, DeFond and Park's (2001) approach, which is also

used in previous studies (e.g. Carey and Simnett 2006; Wang and Xin 2011), is adopted to estimate abnormal working capital accruals. This measure is used because previous research suggests that managers have the most discretion over working capital accruals (Becker et al. 1998; Ashbaugh et al. 2003). Total accruals and the likelihood of the audit firm issuing a qualified audit opinion are used as additional proxies for audit quality. A number of client-specific variables predicted to be associated with these proxies (e.g. size, profitability, sales growth, operating cash flows, market-to-book ratio) are also included (e.g. Carcello and Li 2013; Gunny and Zhang 2013; Horton, Tuna, and Wood 2014). Definitions of all variables are given in Appendix 4.

Finally, in all three models, year dummies and industry dummies are included to control for year-fixed and industry-fixed effects that may affect the dependent variables (e.g. Gunny and Zhang 2013). Furthermore, as the test variables are based on each audit firm, audit firm-fixed effects are included in the model to control for unobserved audit firm characteristics that may affect estimation of the test variable. The model is clustered at the client level.[32] All continuous variables are winsorised at the one per cent and 99 per cent levels.

4.3.2 Sample selection

Ratings data cover inspection reports for the period 2007–2015,[33] collected from FRC

[32] In alternative models, industry-clustered standard errors were used when calculating *t* statistics for all analyses.

[33] As shown in Table 4.4, ratings data are available from 2007 to 2015. As discussed, for the audit fees study, it was proposed to measure the association between the latest available rating (i.e. rating in year *t*-1) and current audit fees (year *t*). As rating data start from 2007, the audit fees data corresponding with rating data for 2007 should be data in the following year, namely 2008; Also, as the ratings data end in 2015, the corresponding audit fees data should be for 2016. Therefore, for the audit fees study, the firm-year observations run from 2008 to 2016. This is the same for the audit firm switching analysis. For the audit quality study, current ratings (ratings in year *t*) are matched with current audit quality (audit quality in year *t*), and the ratings and audit quality data should be matched on the same year, so firm-year observations for audit quality analyses run from 2007 to 2015, the same period as the ratings data.

inspection reports available online. Clients' audit firm data were collected mainly from the Thomson Reuters Database. As the Thomson Reuters data have many missing values for audit firm information, missing data were hand-collected by matching the client with its corresponding annual reports. For the other control variables, data were collected from Datastream Worldscope.

The initial sample focused on all UK-domiciled companies listed on the London Stock Exchange (LSE). For all analyses, firm-years were excluded where: a) clients traded on the AIM market, b) clients were in the financial sector, c) clients did not have required audit firm data, d) clients were not domiciled in the UK, e) there were no data to measure the test variables, or f) there were no data to measure client-level control variables. In addition to these restrictions, for the audit fees analysis, when forming the test variable, observations were excluded where clients did not use the same audit firm between the current and prior years.

Table 4.5 describes the sample selection process. The final sample has 2,156 firm-year observations for the audit fees analysis, and 2,397 firm-year observations for the audit firm switching analysis. For the audit quality analysis, the final sample has 2,585 firm-year observations for abnormal working capital accruals analysis, 2,636 for total accruals analysis, and 2,614 for audit opinion analysis.

Table 4.5: Sample selection process

Panel A: Sample for audit fees analysis	**Observations**
Firm-year observations listed on LSE, 2007–2016	14,294
Delete: Total assets, sales or market value of equity zero	1,346
Firm-year observations with fiscal-year changes	154
Firm-year observations listed on AIM	7,788
Firm-year observations from the financial sector	999
Firm-year observations without audit firm data	93
Firm-year observations with clients not domiciled in UK	61
Firm-year observations without data to measure test variable	1,507
Firm-year observations without data to measure client control variables	190
Final sample for audit fees analysis, 2008-2016	**2,156**

Panel B: Sample for audit firm switching analysis	**Observations**
Firm-year observations listed on LSE, 2007–2016	14,294
Delete: Total assets, sales or market value of equity zero	1,346
Firm-year observations with fiscal-year changes	154
Firm-year observations listed on AIM	7,788
Firm-year observations from the financial sector	999
Firm-year observations without audit firm data	93
Firm-year observations with clients not domiciled in UK	61
Firm-year observations without data to measure test variable	1,417
Firm-year observations without data to measure client control variables	39
Final sample for audit firm switch analysis 2008-2016	**2,397**

Panel C: Sample for audit quality analysis	**Observations**
Firm-year observations listed on LSE, 2005–2016	19,772
Delete: Total assets, sales or market value of equity zero	1,706
Firm-year observations with fiscal-year changes	226
Firm-year observations listed on AIM	12,206
Firm-year observations from the financial sector	1,111
Firm-year observations without audit firm data	284
Firm-year observations with clients not domiciled in UK	65
Firm-year observations without data to measure test variable	1,483
Firm-year observations without data to measure client control variables:	
Abnormal working capital accruals analysis (AWCA)	106
Total accruals analysis	55
Audit opinion analysis	77
Final sample for AWCA analysis 2007–2015	**2,585**
Final sample for total accruals analysis 2007–2015	**2,636**
Final sample for audit opinion analysis 2007–2015	**2,614**

Table 4.6: Composition of sample

Panel A: By year

Year	Audit Fees		Audit Firm Switch		Abnormal Accruals		Total Accruals		Audit Opinion	
	N	%	N	%	N	%	N	%	N	%
2007	-	-	-	-	296	11.45	301	11.42	295	11.29
2008	246	11.41	279	11.64	348	13.46	353	13.39	350	13.39
2009	279	12.94	319	13.31	318	12.30	323	12.25	320	12.24
2010	270	12.52	295	12.31	280	10.83	287	10.89	286	10.94
2011	247	11.46	268	11.18	293	11.33	302	11.46	301	11.51
2012	251	11.64	280	11.68	305	11.80	313	11.87	311	11.90
2013	249	11.55	266	11.10	269	10.41	276	10.47	274	10.48
2014	249	11.55	266	11.10	357	13.81	362	13.73	359	13.73
2015	281	13.03	323	13.48	119	4.60	119	4.51	118	4.51
2016	84	3.90	101	4.21	-	-	-	-	-	-
Total	**2,156**		**2,397**		**2,585**		**2,636**		**2,614**	

Panel B: By audit firm

Audit Firm	Audit Fees		Audit Firm Switch		Abnormal Accruals		Total Accruals		Audit Opinion	
	N	%	N	%	N	%	N	%	N	%
Deloitte	538	24.95	613	25.57	646	24.99	671	25.46	663	25.36
E&Y	275	12.76	294	12.27	324	12.53	325	12.33	327	12.51
KPMG	567	26.30	629	26.24	658	25.45	673	25.53	669	25.59
PWC	711	32.98	780	32.54	848	32.80	856	32.47	855	32.71
Baker Tilly	6	0.28	9	0.38	11	0.43	11	0.42	11	0.42
BDO	26	1.21	34	1.42	48	1.86	50	1.90	44	1.68
Crowe Clark	1	0.05	1	0.04	1	0.04	1	0.04	1	0.04
Grant Thornton	27	1.25	31	1.29	43	1.66	43	1.63	38	1.45
PKF	5	0.23	6	0.25	6	0.23	6	0.23	6	0.23
Total	**2,156**		**2,397**		**2,585**		**2,636**		**2,614**	

Note: The sample period is 2008–2016 for audit fees analysis, and 2007–2015 for audit quality analysis.

Table 4.6 provides an overview of the sample composition by year and audit firm (Panels A and B respectively) for all analyses. As expected, the sample size is evenly allocated, except in 2016 for the audit fees and audit firm switching samples, and in 2015 for the audit quality sample.[34] The sample size varies considerably between Big

[34] For the audit fees and audit firm switching analyses, for the most recent inspection, the fiscal period ended in April 2015. In order to measure the impact of lagged rating on current audit fees, the audit fees data for 2016 can only be up to April, so 2016 has fewer observations than other years. Similarly, for audit quality analysis, current

4 audit firms and non-Big 4 audit firms, and the sample size for non-Big 4 audit firms is very limited, as in the case of Crowe Clark and PKF.

Table 4.7 describes the firm-level variables used for all regression analyses. Panels A, B, C, D and E report the distributional properties of all variables in audit fees, audit firm switching, abnormal accruals, total accruals and audit opinion samples respectively. The mean values of *AWCA, |AWCA|* and *TOT_ACCRUALS* are 0.000, 0.038 and -0.048. Only 3.7 per cent of the sample switched audit firms, and 1.2 per cent received a qualified audit opinion for all firm-year observations. The mean value of audit fees is 6.709. For *PROC3*, around 7–8 per cent of engagements were rated 'Significant improvements required', based on all firm-year observations. No multicollinearity issues are identified in untabulated results.[35]

Table 4.7: Firm-level descriptive statistics

Panel A: Audit fees sample (N=2,156)

Variable	Mean	Median	Std. Dev
AUDFEE_RAW	2071.413	728.500	3878.603
AUDFEE	6.709	6.591	1.302
PROC3	0.076	0.071	0.057
SIZE	13.551	13.379	1.818
LOSS	0.172	0.000	0.378
LEVERAGE	0.174	0.151	0.159
BM	0.649	0.476	0.658
CFO	0.094	0.088	0.080
BUSY	0.502	1.000	0.500
ROA	0.042	0.050	0.099
LIQUIDITY	1.574	1.354	1.008
NBS	1.105	1.099	0.544
NGS	1.338	1.386	0.551
FORSASLES	0.472	0.509	0.363

audit quality is matched with the current rating, so the data can only be up to April 2015; hence, 2015 has fewer observations for audit quality analysis.

[35] The only exception is *ROA*, which is positively correlated with *CFO* and negatively correlated with *LOSS*; the empirical findings remain unchanged after dropping *ROA* from the audit opinion and audit fees analyses.

Variable	Mean	Median	Std. Dev
INVREC	0.276	0.252	0.187
OPINION	0.013	0.000	0.111
Panel B: Audit firm switch sample (N=2,397)			
SWITCH	0.037	0.000	0.189
PROC3	0.077	0.071	0.058
SIZE	13.525	13.368	1.811
%SIZE	0.063	0.033	0.202
LEVERAGE	0.177	0.154	0.163
%LEVERAGE	0.002	0.000	0.068
ROA	0.041	0.050	0.099
LOSS	0.175	0.000	0.380
OPINION	0.013	0.000	0.113
INVREC	0.277	0.251	0.191
Panel C: Abnormal working capital accruals sample (N=2,585)			
AWCA	0.000	0.001	0.054
|AWCA|	0.038	0.023	0.045
PROC3	0.077	0.071	0.060
SIZE	13.366	13.216	1.850
LOSS	0.173	0.000	0.378
LAGGED_ACCRUALS	-0.048	-0.039	0.075
LEVERAGE	0.172	0.147	0.163
BM	0.668	0.476	0.711
CFO	0.089	0.086	0.086
BUSY	0.501	1.000	0.500
AGE	2.962	3.091	0.856
SALES_GROWTH	0.073	0.049	0.205
LITIGIOUS	0.241	0.000	0.428
Panel D: Total accruals sample (N=2,636)			
TOT_ACCRUALS	-0.048	-0.040	0.075
PROC3	0.077	0.071	0.060
SIZE	13.355	13.211	1.844
LOSS	0.175	0.000	0.380
LAGGED_ACCRUALS	-0.048	-0.039	0.075
LEVERAGE	0.173	0.147	0.163
BM	0.678	0.480	0.720
CFO	0.089	0.085	0.086
BUSY	0.499	0.000	0.500
AGE	2.960	3.091	0.860
SALES_GROWTH	0.072	0.048	0.204
LITIGIOUS	0.238	0.000	0.426

Panel E: Audit opinion sample (n=2,614)

Variable	Mean	Median	Std. Dev
OPINION	0.012	0.000	0.110
PROC3	0.077	0.071	0.060
SIZE	13.372	13.216	1.836
ROA	0.040	0.050	0.102
LOSS	0.174	0.000	0.379
LEVERAGE	0.172	0.146	0.163
BM	0.667	0.476	0.703
CFO	0.090	0.086	0.085
BUSY	0.500	1.000	0.500
LIQUIDITY	1.571	1.340	1.026
LITIGIOUS	0.238	0.000	0.426

Notes: Panels A, B, C, D and E describe all firm-level variables used in the regression analysis. The sample period is 2007–2015 for audit fees and audit firm switching analyses, and 2008–2016 for audit quality analysis. See Appendix 4 for definitions of all variables. All continuous variables are winsorised at the 1st and 99th percentiles.

4.4 Empirical findings

This section presents findings on the impact of the latest available rating on current audit fees, the consequences of ratings for audit firm switching, and the association between ratings results and audit quality.

4.4.1 FRC ratings and audit fees

Table 4.8 reports the results of the audit fees analysis. In Model 1, the coefficient of *PROC3* is positive and significant at the five per cent level. This indicates that if an audit firm has a higher proportion of deficient ratings in the last fiscal period, its current audit fees will increase. Specifically, a one per cent increase in deficient ratings will result in a 0.533 per cent audit fee premium or, in other words, the audit fee premium will be 5.33 per cent if the deficiency increase is 10 per cent. The control variables are generally significant and with signs consistent with the previous literature. Furthermore, the audit fees model has a high R-squared of 0.793.

Table 4.8: Impact of FRC ratings on audit fees

Independent variables	**(1)**	**(2)**	**(3)**
PROC3	0.533** *(2.39)*	0.533** *(2.60)*	0.380** *(1.96)*
SIZE	0.582*** *(33.69)*	0.582*** *(22.67)*	0.543*** *(8.61)*
LOSS	0.168*** *(3.17)*	0.168*** *(3.79)*	-0.018 *(-0.49)*
LEVERAGE	-0.111 *(-0.62)*	-0.111 *(-0.51)*	-0.056 *(-0.36)*
BM	-0.142*** *(-4.60)*	-0.142*** *(-4.15)*	0.012 *(0.44)*
CFO	-0.164 *(-0.56)*	-0.164 *(-0.48)*	-0.245 *(-0.99)*
BUSY	0.183*** *(3.60)*	0.183** *(3.11)*	0.183 *(1.44)*
LIQUIDITY	-0.076*** *(-2.72)*	-0.076*** *(-1.45)*	-0.013 *(-0.47)*
ROA	-0.323 *(-1.25)*	-0.323* *(-1.89)*	-0.740*** *(-3.53)*
NBS	0.154*** *(4.27)*	0.154*** *(3.17)*	0.010 *(0.34)*
NGS	0.184*** *(3.86)*	0.184** *(2.60)*	0.020 *(0.60)*
FORSALES	0.648*** *(7.84)*	0.648*** *(6.60)*	0.240*** *(3.02)*
INVREC	0.522*** *(3.08)*	0.522 *(1.47)*	0.680* *(1.72)*
OPINION	0.295*** *(3.09)*	0.295** *(2.71)*	0.202*** *(3.08)*
INTERCEPT	-2.665*** *(-6.32)*	-2.665*** *(-6.54)*	-1.005 *(-1.13)*
Industry FE	YES	YES	NO
Year FE	YES	YES	YES
Client FE	NO	NO	YES
Audit Firm FE	YES	YES	YES
N	2,156	2,156	2,156
Adjusted R^2	0.793	0.793	0.910

Notes: This table reports the coefficient estimates from regression analyses, showing the average effect of the rating result (i.e. rating in year *t*-1) on audit fees (i.e. audit fees in year *t*). The sample period is 2008–2016 (calendar year). See Appendix 4 for definitions of all variables. All continuous variables are winsorised at the 1st and 99th percentiles. In Models 1 and 3, *t*-statistics are reported in *italics* based on client clusters and heteroskedasticity-corrected standard errors. In Model 2, *t*-statistics are based on industry clusters and heteroskedasticity-corrected standard errors. ***, ** and * denote significance at the 1%, 5% and 10% levels, respectively (two-tailed test).

Models 2 and 3 repeat the analysis of baseline Model 1, but employ alternative clustering approaches and fixed effects. Specifically, in Model 2, Model 1 is repeated using industry-clustered standard errors, and in Model 3, industry-fixed effects are replaced with client-fixed effects and standard errors clustered at the client level. In both cases, the baseline findings remain unchanged.

The robustness of the main findings reported in Table 4.8 was assessed through a series of additional tests using baseline Model 1 (see Table 4.9).

Table 4.9: Robustness tests for audit fees analysis

Independent variables	Alternative definition of rating	Other rating scales		Including AIM companies	Excluding clients cross-listed in US	Further lags
	(1)	(2)	(3)	(4)	(5)	(6)
$PROC3_{t-1}$	-	-	-	0.215* *(1.93)*	0.619** *(2.51)*	0.715** *(2.36)*
PROC3_LAGGED	-	-	-	-	-	-0.184 *(-0.69)*
DIFFERENCE_1	0.081*** *(2.93)*	-	-	-	-	-
$PROC2A_{t-1}$	-	0.015 *(0.15)*	-	-	-	-
$PROC2B_{t-1}$	-	-	-0.100 *(-1.07)*	-	-	-
Control variables	YES	YES	YES	YES	YES	YES
N	2,156	2,156	2,156	3,811	1,672	1,524
Adjusted R^2	0.793	0.793	0.793	0.843	0.710	0.789

Notes: This table reports a number of sensitivity tests using baseline Model 1 in Table 4.8. Model 1 uses an alternative definition of the rating variable, *DIFFERENCE_1*, which is a dummy variable and is equal to 1 if *PROC3* is above or equal to the mean value of *PROC3* for all audit firms and years in the sample, and 0 otherwise. Models 2 and 3 test the impact of *PROC2A* and *PROC2B* on audit fees respectively: *PROC2A* is the proportion of audit engagements with category 2A ratings (good with limited improvements required) in the total audit engagements reviewed for a specific year; and *PROC2B* is the proportion of audit engagements with category 2B ratings (improvements required) in the total audit engagements reviewed for a specific year. Model 4 includes all AIM companies in the sample. Model 5 excludes all firm-year observations cross listed in the US. Model 6 tests the impact of *PROC3* and *PROC3_LAGGED* on audit fees: *PROC3_LAGGED* is the proportion of engagements rated 'Significant improvements required' (Category 3) over total engagements reviewed for each audit firm for the fiscal period two years previously. *AUDFEE* is the natural log of audit fees in thousands of GBP. *PROC3* is the proportion of engagements rated 'Significant improvements required' (Category 3) over total engagements reviewed for each audit firm for a specific year. See Appendix 4 for definitions of all other variables. All continuous variables are winsorised at the 1st and 99th percentiles. *T-statistics* are based on client clusters and heteroskedasticity-corrected standard errors. ***, ** and * denote significance at the 1%, 5% and 10% levels, respectively (two-tailed test).

For brevity, the results are presented only for variables of interest, although the full set of controls described earlier is included in all models. On the whole, these are robust to alternative research design choices.

First, the sensitivity of the findings to alternative ways of constructing rating variables is assessed. Specifically, a dummy variable (i.e. DIFFERENCE) is used, equal to 1 if *PROC3* is above or equal to the mean value of *PROC3* based on all audit firms and years in the sample, and 0 otherwise. This dummy variable allows for determination of whether it makes a difference if the proportion of lower ratings is above or below the audit industry average. The results in Table 4.9 (column 1) show that DIFFERENCE is still positive and significant, which indicates that the proportion of lower ratings may have a significant impact on audit fees if it is above the industry average.

Second, in order to observe the impact of other rating scales on audit fees, *PROC3* is replaced with *PROC2A* and *PROC2B* in Models 2 and 3 respectively. Specifically, *PROC2A* is the proportion of audit engagements with category 2A ratings (good with limited improvements required) in the total audit engagements reviewed for a specific year, and *PROC2B* is the proportion of audit engagements with category 2B ratings (improvements required) in the total audit engagements reviewed for a specific year. The results shown in Table 4.9 (columns 2 and 3) reveal no significant impact on audit fees of using the other rating scales. These results indicate that only extremely low ratings (i.e. *PROC3*) have a significant impact on audit fees.

Third, as discussed earlier, a small proportion of AIM companies fall within the FRC's inspection regime, so in order to measure the impact of companies listed in this

market, AIM companies are included in the sample to observe whether the result persists. The results in Column 4 show that *PROC3* is still positive and significant at the 10 per cent level (coefficient of *PROC3* = 0.215; *t*-statistic = 1.93). However, both the coefficient and *t*-statistic are lower than in the baseline model in Table 4.8. This is probably because the FRC's inspection sample is mainly from the LSE's main market. Fourth, clients cross-listed on a US stock exchange and hence subject to SEC regulation are excluded, and again, the primary results remain qualitatively unchanged (see Column 5).

Finally, in order to observe the impact of inspections completed more than one year ago, the analysis is repeated while adding another rating variable *PROC3_LAGGED*, which is the proportion of engagements rated 'Significant improvements required' (Category 3) over total engagements reviewed for each audit firm for the fiscal period two years previously. The results in Column 6 show that *PROC3* is still positive and significant at the five per cent level, whereas the coefficient of *PROC3_LAGGED* is insignificant. This suggests that inspections completed two years ago do not significantly affect current audit fees.

In general, if an audit firm has a higher proportion of low ratings during the previous fiscal period, its current audit fees will increase, and this finding is robust to a series of research design choices.

Tests were also conducted to establish whether audit fee premiums differ between larger and smaller audit firms. Specifically, audit fee premiums are expected to be more evident among larger audit firms. Previous studies (e.g. Choi et al. 2008; DeFond and

Zhang 2014) show that reputational costs increase with audit firm size, and that large audit firms have deep pockets that may be targeted by shareholders in litigation claims. Thus, if an unfavourable rating is received, large audit firms have stronger incentives to improve audit quality (i.e. greater audit effort) to mitigate litigation risks.

Table 4.10: Heterogeneity tests

Independent variables	**(1)**	**(2)**	**(3)**
PROC3_BIG4	*0.586** (2.31)*	*0.586** (2.59)*	*0.422* (1.84)*
PROC3_NON-BIG4	*0.348 (0.86)*	*0.348 (0.62)*	*0.205 (0.73)*
SIZE	0.582*** *(33.67)*	0.582*** *(22.66)*	0.544*** *(8.62)*
LOSS	0.167*** *(3.16)*	0.167*** *(3.79)*	-0.017 *(-0.48)*
LEVERAGE	-0.111 *(-0.62)*	-0.111 *(-0.51)*	-0.056 *(-0.36)*
BM	-0.142*** *(-4.59)*	-0.142*** *(-4.08)*	0.012 *(0.45)*
CFO	-0.165 *(-0.56)*	-0.165 *(-0.48)*	-0.243 *(-0.98)*
BUSY	0.183*** *(3.60)*	0.183** *(3.11)*	0.183 *(1.43)*
LIQUIDITY	-0.075*** *(-2.71)*	-0.075 *(-1.44)*	-0.013 *(-0.47)*
ROA	-0.322 *(-1.25)*	-0.322* *(-1.88)*	-0.738*** *(-3.52)*
NBS	0.154*** *(4.25)*	0.154*** *(3.17)*	0.009 *(0.32)*
NGS	0.183*** *(3.86)*	0.183** *(2.60)*	0.020 *(0.60)*
FORSALES	0.648*** *(7.84)*	0.648*** *(6.61)*	0.241*** *(3.02)*
INVREC	0.523*** *(3.08)*	0.523 *(1.47)*	0.679* *(1.71)*
OPINION	0.294*** *(3.09)*	0.294** *(2.72)*	0.201*** *(3.07)*
BIG4	1.184*** *(5.76)*	1.184*** *(5.31)*	-0.139 *(-0.70)*
INTERCEPT	-3.226*** (-11.71)	-3.226*** (-6.25)	-0.737 (-0.81)
Industry FE	YES	YES	NO
Year FE	YES	YES	YES
Audit Firm FE	YES	YES	YES
Client FE	NO	NO	YES
N	2,156	2,156	2,156
Adjusted R2	0.793	0.793	0.910

Notes: This table reports the coefficient estimates from further heterogeneity analysis. It distinguishes between companies with or without a Big 4 audit firm (PROC3_BIG4 and PROC3_NON-BIG4). The sample period is 2008–2016 (calendar year). See Appendix 1 for definitions of all variables. All continuous variables are winsorised at the 1st and 99th percentiles. Models 1 and 3 report (in italics) *t*-statistics based on client clusters and heteroskedasticity-corrected standard errors. Model 2 reports *t*-statistics based on industry clusters and heteroskedasticity-corrected standard errors. ***, ** and * denote significance at the 1%, 5% and 10% levels, respectively (two-tailed test).

Moreover, in an oligopolistic audit market, especially for large audit firms, where clients potentially have less choice, the likelihood of audit firms passing on increased

costs through fees is greater.

As shown in Table 4.10, using a Big 4 indicator, all observations were split into two non-overlapping groups of companies with Big 4 and non-Big 4 audit firms. The coefficients for *PROC3_BIG4* and *PROC3_NON-BIG4* show the effect of FRC ratings on audit fees for companies with Big 4 audit firms and non-Big 4 audit firms, respectively. As shown in Model 1 of Table 4.10, *PROC3_BIG4* is positive (0.586) and significant at the five per cent level, while *PROC3_NON-BIG4* is insignificant but still positive, and of smaller economic magnitude. In Model 2, the analysis is repeated using industry-clustered standard errors, and in Model 3, industry-fixed effects are replaced with client-fixed effects. There is no qualitative change in the results of either model. Overall, the results show that audit fee premiums are more concentrated in companies with Big 4 audit firms.

4.4.2 FRC ratings and audit firm switching

Table 4.11 reports the results of audit firm switching (SWITCH) analysis using logit regression. In Model 1, the coefficient of *PROC3* is insignificant, indicating that FRC ratings do not significantly affect audit committees' decisions on audit firm appointments. With respect to the control variables, the results indicate that audit firm switching is more common for larger companies.[36] The pseudo-R^2 is 5.4 per cent, which is similar to the previous literature (e.g. Weber et al. 2008). In Model 2, the

[36] Similarly to Weber et al. (2008), which is based on a unique German setting, most control variables in the audit firm switching analysis are insignificant, probably because the UK and Germany have fewer observations than US studies, so a relatively low frequency of audit firm switching may weaken the power of the test.

analysis is repeated using industry-clustered standard errors, and the results do not change qualitatively.[37]

Table 4.11: Audit firm switching analysis

Independent variables	**(1)**	**(2)**
PROC3	-0.557 *(-0.22)*	-0.557 *(-0.22)*
SIZE	0.147** *(2.04)*	0.147* *(1.73)*
%SIZE	-0.473 *(-0.76)*	-0.473 *(-0.83)*
LEVERAGE	0.399 *(0.57)*	0.399 *(0.58)*
%LEVERAGE	1.118 *(0.65)*	1.118 *(0.67)*
ROA	-0.426 *(-0.24)*	-0.426 *(-0.22)*
LOSS	-0.680 *(-1.40)*	-0.680 *(-1.38)*
OPINION	0.191 *(0.20)*	0.191 *(0.19)*
INVREC	0.504 *(0.78)*	0.504 *(1.23)*
INTERCEPT	-4.739*** (-4.11)	-4.739*** (-3.81)
Industry FE	YES	YES
Year FE	YES	YES
Audit Firm FE	YES	YES
N	2,387	2,387
Pseudo R^2	0.054	0.054

Notes: This table reports the coefficient estimates from audit firm switching analysis. The sample period is 2008–2016 (calendar year). *SWITCH* is equal to 1 if a client changed audit firm between the previous (*t*-1) and current (*t*) year, and 0 otherwise. *PROC3* is the proportion of engagements rated 'Significant Improvements Required' (Category 3) over total engagements reviewed for each audit firm for a specific year. See Appendix 4 for definitions of all other variables. All continuous variables are winsorised at the 1st and 99th percentiles. Models 1 (2) report (in *italics*) *t*-statistics based on client (industry) clusters and heteroskedasticity-corrected standard errors. ***, ** and * denote significance at the 1%, 5% and 10% levels, respectively (two-tailed test).

Similarly to the audit fee analysis, additional robustness tests were performed, using an alternative definition of *PROC3*, the impact of other rating scales, the inclusion of AIM companies and the exclusion of client cross-listing in the US (see Table 4.12).

[37] Some observations in the audit firm switching analysis were dropped when running the regression because some audit firm indicators perfectly predict the dependent dummy variable. As a sensitivity test, audit firm-fixed effects were dropped from the baseline model, and the result did not change qualitatively.

Table 4.12 Robustness tests for audit firm switching analysis

Independent variables	**Alternative definition of rating**	**Other rating scales**		**Including AIM companies**	**Excluding clients cross-listed in US**
	(1)	**(2)**	**(3)**	**(4)**	**(5)**
PROC3	-	-	-	*-0.090 (-0.07)*	*0.765 (0.27)*
DIFFERENCE_1	*0.222 (0.62)*	-	-	-	-
PROC2A	-	*1.322 (1.27)*	-	-	-
PROC2B	-	-	*-1.298 (-1.25)*	-	-
Control variables	*YES*	*YES*	*YES*	*YES*	*YES*
N	*2,387*	*2,387*	*2,387*	*4,342*	*1,827*
Pseudo R^2	*0.055*	*0.057*	*0.056*	*0.036*	*0.039*

Notes: This table reports a number of sensitivity tests using baseline Model 1 in Table 4.11. In Model 1 uses an alternative definition of the rating variable, *DIFFERENCE_1*; this is a dummy variable equal to 1 if *PROC3* is above or equal to the mean value of *PROC3* based on all audit firms and years in the sample, and 0 otherwise. Models 2 and 3 test for the impact of *PROC2A* and *PROC2B* on audit firm switching respectively: *PROC2A* is the proportion of audit engagements with category 2A ratings (good with limited improvements required) in the total audit engagements reviewed for a specific year; and *PROC2B* is the proportion of audit engagements with category 2B ratings (improvements required) in the total audit engagements reviewed for a specific year. Model 4 includes all AIM companies in the sample. Model 5 excludes all firm-year observations cross listed in the US. *SWITCH* is equal to 1 if a client changed audit firm between the previous (*t*-1) and current (*t*) year, and 0 otherwise. *PROC3* is the proportion of engagements rated 'Significant improvements required' (Category 3) over total engagements reviewed for each audit firm for a specific year. See Appendix 4 for definitions of all other variables. All continuous variables are winsorised at the 1st and 99th percentiles. *T-statistics* are based on client clusters and heteroskedasticity-corrected standard errors. ***, ** and * denote significance at the 1%, 5% and 10% levels, respectively (two-tailed test).

The findings in Table 4.12[38] reveal that the main inferences do not change qualitatively. Further testing was carried out to establish whether additional control variables might affect the results, including cash (*CASH*), accruals quality (*AWCA*) and client–audit firm mismatch (*MISMATCH*) (e.g. Boone et al. 2015; Wieczynska 2016). Definitions of these variables can be found in Appendix 4. Untabulated results indicate that the basic results did not change qualitatively.

4.4.3 FRC rating and audit quality

Table 4.13 reports the results of audit quality analysis, beginning with analysis of abnormal accruals (absolute and signed values). As shown in the table, *PROC3* is insignificant in both cases. The control variables are generally significant and in a direction consistent with previous research. For example, larger and older clients, and clients with higher book-to-market ratios and cash flows from operating activities have lower levels of abnormal accruals. Next, the analysis is repeated for total accruals, using the same controls as previously. Similarly to the abnormal accruals analysis, *PROC3* is not significant in the total accruals model. Finally, audit opinion is analysed. Similarly to the other three audit quality proxies, *PROC3* is insignificant. In addition, Model 2 repeats Model 1 using industry-clustered standard errors, and Model 3 replaces industry-fixed effects with client-fixed effects and clustered standard errors at the client level.[39] In all cases, the baseline findings remain unchanged.

[38] The test for lagged inspection performed in the audit fees analysis was not included because the construction of PROC3 and PROC3_LAGGED reduces variation in SWITCH. After creating PROC3 and PROC3_LAGGED, only one firm-year observation had switched audit firms between years.

[39] For audit opinion analysis, many observations were dropped when running the regression because some industry and audit firm indicators perfectly predict the dependent dummy variable.

Table 4.13: Audit quality analysis

Independent variables	**|AWCA|**			**AWCA**			**TOT_ACCRUALS**			**OPINION**	
	(1)	**(2)**	**(3)**	**(1)**	**(2)**	**(3)**	**(1)**	**(2)**	**(3)**	**(1)**	**(2)**
PROC3	0.010	0.010	0.002	0.033	0.033	0.035	0.018	0.018	0.019	-4.875	-4.875
	(0.65)	(0.54)	(0.13)	(1.49)	(1.39)	(1.60)	(0.82)	(1.03)	(1.03)	(-1.42)	(-1.10)
SIZE	-0.004***	-0.004***	-0.007	-0.001	-0.001	0.006	0.001	0.001	-0.004	-0.363**	-0.363*
	(-5.44)	(-3.96)	(-1.09)	(-1.34)	(-1.53)	(0.79)	(1.13)	(1.23)	(-0.50)	(-1.97)	(-1.94)
LOSS	0.010***	0.010***	0.002	-0.029***	-0.029***	-0.022***	-0.108***	-0.108***	-0.100***	-0.085	-0.085
	(3.38)	(4.51)	(0.70)	(-7.14)	(-5.99)	(-4.37)	(-23.21)	(-21.61)	(-19.56)	(-0.15)	(-0.14)
LEVERAGE	-0.031***	-0.031**	0.041***	0.008	0.008	0.007	-0.036***	-0.036**	-0.088***	0.763	0.763
	(-4.45)	(-2.60)	(2.72)	(1.13)	(1.20)	(0.36)	(-3.70)	(-2.85)	(-3.48)	(0.41)	(0.49)
BM	-0.006***	-0.006***	-0.002	-0.003*	-0.003*	0.002	-0.008***	-0.008***	-0.007**	0.282	0.282*
	(-4.46)	(-4.13)	(-0.98)	(-1.76)	(-1.93)	(0.80)	(-3.76)	(-5.10)	(-2.41)	(1.23)	(1.73)
CFO	-0.038**	-0.038**	0.007	-0.195***	-0.195***	-0.381***	-0.507***	-0.507***	-0.677***	-1.167	-1.167
	(-2.31)	(-2.38)	(0.23)	(-9.49)	(-8.54)	(-11.32)	(-18.94)	(-13.93)	(-19.45)	(-0.52)	(-0.64)
SALES_ GROWTH	0.042***	0.042***	0.044***	-0.015	-0.015	-0.013	-0.003	-0.003	0.007	-	-
	(5.26)	(5.08)	(5.79)	(-1.40)	(-1.06)	(-0.95)	(-0.30)	(-0.28)	(0.66)	-	-
LITIGIOUS	0.001	0.001	-	-0.002	-0.002	-	-0.008**	-0.008***	-	0.555	0.555
	(0.52)	(0.70)	-	(-0.88)	(-1.16)	-	(-2.38)	(-3.93)	-	(0.85)	(1.11)
AGE	-0.002	-0.002	0.010	0.000	0.000	0.001	0.003*	0.003*	-0.004	-	-
	(-1.32)	(-1.50)	(1.61)	(0.18)	(0.35)	(0.19)	(1.73)	(2.15)	(-0.33)	-	-
LAGGED_ACCRUALS	0.009	0.009	-0.001	-0.092***	-0.092***	-0.105***	0.096***	0.096***	-0.042*	-	-
	(0.56)	(0.62)	(-0.07)	(-4.56)	(-3.93)	(-4.33)	(4.30)	(3.76)	(-1.86)	-	-
BUSY	0.002	0.002	0.011	-0.000	-0.000	-0.019**	-0.005*	-0.005*	-0.003	0.745	0.745
	(0.65)	(0.57)	(1.04)	(-0.14)	(-0.19)	(-2.14)	(-1.72)	(-2.19)	(-0.27)	(1.34)	(1.07)
ROA	-	-	-	-	-	-	-	-	-	-3.646*	-3.646

Independent variables	**|AWCA|**			**AWCA**			**TOT_ACCRUALS**			**OPINION**	
	(1)	**(2)**	**(3)**	**(1)**	**(2)**	**(3)**	**(1)**	**(2)**	**(3)**	**(1)**	**(2)**
	-	-	-	-	-	-	-	-	-	(-1.69)	(-1.29)
LIQUIDITY	-	-	-	-	-	-	-	-	-	-0.283	-0.283*
	-	-	-	-	-	-	-	-	-	(-1.29)	(-1.82)
INTERCEPT	0.124***	0.124***	0.146*	0.100***	0.100***	-0.050	0.057***	0.057***	0.103	-0.891	-0.891
	(4.05)	(3.58)	(1.72)	(2.98)	(3.17)	(-0.45)	(3.43)	(3.65)	(0.98)	(-0.29)	(-0.36)
Industry FE	YES	YES	NO	YES	YES	NO	YES	YES	NO	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Audit Firm FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Client FE	NO	NO	YES	NO	NO	YES	NO	NO	YES	NO	NO
N	2,585	2,585	2,585	2,585	2,585	2,585	2,636	2,636	2,636	1,439	1,439
Adjusted R^2/Pseudo R^2	0.151	0.151	0.325	0.095	0.095	0.143	0.503	0.503	0.650	0.148	0.148

Notes: This table reports the coefficient estimates from the regression analysis, showing the association between the current rating result (rating in year *t*) and current audit quality (audit quality in year *t*). The sample period is 2007–2015 (calendar year). AWCA (|AWCA|) are the abnormal (absolute) working capital accruals scaled by lagged total assets, based on DeFond and Park (2001). TOT_ACCRUALS is the difference between net income before extraordinary items and cash flow from operations, scaled by lagged total assets. OPINION is a dummy variable that equals 1 if the client receives a qualified audit opinion; and 0 otherwise. PROC3 is the proportion of engagements rated 'Significant improvements required' (Category 3) over total engagements reviewed for each audit firm for a specific year. See Appendix 4 for definitions of all other variables. All continuous variables are winsorised at the 1st and 99th percentiles. Models 1 and 3 report *t*-statistics (or *z*-statistics) based on client clusters and heteroskedasticity-corrected standard errors. Model 2 reports *t*-statistics (or *z*-statistics) based on industry clusters and heteroskedasticity-corrected standard errors. ***, ** and * denote significance at the 1%, 5% and 10% levels, respectively (two-tailed test).

Table 4.14: Robustness tests for audit quality analysis

Panel A: Alternative definition of rating

Independent variables	**(1)** ***|AWCA|***	**(2)** ***AWCA***	**(3)** ***TOT_ACCRUALS***	**(4)** ***OPINION***
DIFFERENCE	0.001 (0.55)	0.004 (1.20)	0.003 (0.92)	-0.517 (-1.33)
Control variables	YES	YES	YES	YES
N	2,585	2,585	2,636	1,439
Adj. R^2/Pseudo R^2	0.150	0.095	0.503	0.147

Panel B: Other rating scales (1)

Independent variables	**(1)** ***|AWCA|***	**(2)** ***AWCA***	**(3)** ***TOT_ACCRUALS***	**(4)** ***OPINION***
PROC2A	0.006 (0.78)	0.009 (1.04)	0.004 (0.53)	1.265 (0.78)
Control variables	YES	YES	YES	YES
N	2,585	2,585	2,636	1,439
Adj. R^2/Pseudo R^2	0.151	0.094	0.503	0.146

Panel C: Other rating scales (2)

Independent variables	**(1)** ***|AWCA|***	**(2)** ***AWCA***	**(3)** ***TOT_ACCRUALS***	**(4)** ***OPINION***
PROC2B	-0.007 (-0.98)	-0.015* (-1.74)	-0.007 (-0.88)	-0.560 (-0.39)
Control variables	YES	YES	YES	YES
N	2,585	2,585	2,636	1,439
Adj. R^2/Pseudo R^2	0.151	0.095	0.503	0.145

Panel D: Including AIM companies

Independent variables	**(1)** ***|AWCA|***	**(2)** ***AWCA***	**(3)** ***TOT_ACCRUALS***	**(4)** ***OPINION***
PROC3	0.026 (1.39)	0.032 (1.49)	0.009 (0.42)	0.144 (0.12)
Control variables	YES	YES	YES	YES
N	4,694	4,694	4,812	4,651
Adj. R^2/Pseudo R^2	0.362	0.059	0.248	0.258

Panel E: Excluding clients cross-listed in US

Independent variables	**(1)** ***|AWCA|***	**(2)** ***AWCA***	**(3)** ***TOT_ACCRUALS***	**(4)** ***OPINION***
PROC3	0.019 (1.08)	0.025 (1.01)	0.017 (0.68)	-4.764 (-1.41)
Control variables	YES	YES	YES	YES
N	2,030	2,030	2,081	1,150
Adj. R^2/Pseudo R^2	0.159	0.108	0.490	0.131

Table 4.14 reports a number of sensitivity tests using baseline Model 1 in Table 4.13. The sample period is 2007–2015.Panel A uses an alternative definition of rating variable, *DIFFERENCE*, which is a dummy variable and is equal to 1 if *PROC3* is above or equal to the mean value of *PROC3* based on all audit firms and years in the sample, and 0 otherwise. Panels B and C test the impact of *PROC2A* and *PROC2B* on audit quality: *PROC2A* is the proportion of audit engagements with category 2A ratings (good with limited improvements required) in the total audit engagements being reviewed for a specific year; *PROC2B* is the proportion of audit engagements with category 2B ratings (improvements required) in the total audit engagements being reviewed for a specific year. Panel D includes all AIM companies in the sample. Panel E excludes all firm-year observations cross-listed in the US. *AWCA (|AWCA|)* are the abnormal (absolute) working capital accruals scaled by lagged total assets, based on DeFond and Park (2001). *TOT_ACCRUALS* is the difference between net income before extraordinary items and cash flow from operations scaled by lagged total assets. *OPINION* is a dummy variable that equals 1 if the client receives a qualified audit opinion; and 0 otherwise. *PROC3* is the proportion of engagements rated 'Significant improvements required' (Category 3) over total engagements reviewed for a specific year. See Appendix 4 for definitions of all other variables. All continuous variables are winsorised at the 1st and 99th percentiles. *T-statistics* are based on client clusters and heteroskedasticity-corrected standard errors. ***, ** and * denote significance at the 1%, 5% and 10% levels, respectively (two-tailed test).

Similarly to the audit fees and audit firm switching analysis, a series of robustness tests was performed. As shown in Table 4.14, the findings generally do not change qualitatively. Overall, the findings suggest that FRC ratings are not useful for distinguishing between high- and low-quality audits. This is consistent with the results of the audit firm switching analysis, and to some extent explains why inspection results do not affect audit committees' audit firm appointment decisions.

4.5 Conclusion

This study examines the costs and benefits arising from the FRC's issuance of overall quality ratings. Based on a large sample of UK-listed clients, a significant increase in audit fees is found when the audit firm has a higher proportion of engagements with deficient ratings, probably arising from the additional effort and resources needed to meet the FRC's requirements. This significant increase in audit fees is more concentrated among clients with Big 4 audit firms, because the latter have greater concerns for reputation and 'deep pockets' which may be targetted by shareholders. However, there is no evidence to suggest that FRC ratings may affect clients' likelihood of switching audit firms, and no significant relationship is found between FRC ratings and audit quality. The results suggest that FRC ratings are not perceived by audit committees as a signal of audit quality, and that the inspection results do not distinguish between high- and low-quality audits. Possible reasons for this are FRC inspectors' lack of expertise and experience, their risk-based inspection approach, and inappropriate focus in their inspections.

Overall, this study provides evidence that the audit inspection regime in the UK brings additional costs to both clients and audit firms, while failing to bring corresponding benefits. This conclusion is consistent with the view that public oversight may be focused

on documentation and compliance rather than on a holistic assessment of audit quality (i.e. Beattie et al. 2013; Boone et al. 2015). However, this study is subject to some limitations. These include the low power of audit firm switching analysis, possibly due to the limited number of observations, and with regard to the audit quality analysis, the inability of the audit quality proxies used in extant archival studies to capture the quality of audit engagements undertaken by audit firms. In general, this study provides a starting point for further research and provides potentially useful insights for policy makers and national audit firm regulators.

Chapter 5: Conclusion

This thesis has investigated the costs and benefits of public oversight of the audit profession in Europe. First, it has provided a detailed review of the legislative development of public oversight in Europe, as well as of the literature on public oversight systems. The consequences for audit pricing and quality of the inspection regime have been examined on both a pan-European level and exclusively in the UK. In general, this thesis contributes to the literature on audit regulation and has implications for the future policy making of auditing regulators.

Chapter 2 began by reviewing the legislative development of public oversight both before and after the publication of Directive 2006/43/EC. Prior to 2006, due to a flurry of accounting scandals in the early twenty-first century, the EC was already considering the establishment of a harmonised oversight structure for the audit profession. This included its establishment of the Committee on Auditing in 1998, its release of the 'Recommendation on Quality Assurance for the Statutory Audit in the European Union: Minimum Requirements' in 2000 and its 'Communication from the Commission to the Council and the European Parliament Reinforcing Statutory Audit in the EU' for the audit profession in 2003. However, as there was no mandatory requirement for the implementation of public oversight systems, various oversight structures for quality assurance over the audit profession were in place across Europe. These were mainly of three types: (a) professionally self-regulated or peer-reviewed, (b) governmental public oversight, and (c) mixed or unclearly defined oversight systems. Most countries did not have a tradition of public oversight, having had long-standing self-regulated or peer-review systems in which the audit profession played a significant supervisory role. Only a minority of countries had systems of governmental public oversight, or mixed or unclearly defined

oversight systems.

In order to harmonise oversight systems across Europe, in 2006, Directive 2006/43/EC was published and a public oversight system implemented across the European Union. Each EU member state was then required to establish a system of public oversight over the audit profession. The Directive has been useful in reinforcing regulation over the auditing profession and achieving a uniformly high quality of auditing services in all EU member states, which may strengthen investors' and other stakeholders' confidence in financial reporting. However, as the Directive only provides basic principles and minimum requirements for organising public oversight, and permits considerable differences in the design of quality assurance systems, there is great flexibility for member states to translate this provision and design their own POAs, resulting in a heterogeneity of POA designs in Europe.

Since the release of Directive 2006/43/EC, the EC has taken further steps to refine and detail the shape of public oversight. These include the publication of the 2008 Recommendation and Directive 2014/56/EU. The 2008 Recommendation focuses specifically on quality assurance of public interest entities, and defines certain important terms in greater detail. In Directive 2014/56/EU, most criteria remain unchanged relative to Directive 2006/43/EC (FEE, 2014), but there are some changes relevant to quality assurance. These include the frequency of quality assurance reviews, further requirements for quality assurance reviewers, delegation of oversight powers, further requirements for sanctions, and cooperation of audit oversight bodies and supervision. Compared with Directive 2006/43/EC, the new Directive provides greater transparency and predictability of requirements pertaining to audit firms, increasing investors' confidence in the credibility

of financial reporting and improving mutual cooperation between competent authorities in each member state. However, it is still too early to claim that the new Directive is entirely successful, and further evidence is needed to evaluate its efficiency and effectiveness.

Overall, the development of audit regulation from the early twenty-first century ended an era of self-regulation in the audit profession and implemented public oversight across Europe, and the EC appears to be aiming progressively to improve the public oversight system.

The review of previous literature in Chapter 2 addresses a broad stream of literature on the effects of regulation and cost-benefit analyses, based on Leuz and Wysocki (2016), as well as studies specifically on public oversight of the audit profession. Primary studies of public oversight began in the last decade, and most have been based on the US. Within the US studies, some support the current public oversight system and consider that the PCAOB inspection regime may increase audit quality and be beneficial to the various stakeholders, including audit clients and investors. However, other studies point out the regime's weaknesses and claim that it is ineffective and does not bring corresponding benefits. Apart from studies of the advantages and disadvantages of the PCAOB, other US studies analyse the quality assurance system from other angles, and in addition to studies based in the US, a small number of studies analyse the quality assurance systems of non-US settings. In addition, a few regulation studies provide cost-benefit analyses. Overall, there is no conclusive determination of the efficiency and effectiveness of public oversight in the US, and further research is still needed on public oversight systems, especially in institutional settings outside the US.

Having reviewed the legislative development in Europe and previous literature,

Chapter 3 has presented a study of the public oversight system at a pan-European level, looking specifically at the implications for audit pricing and audit quality of different ways of designing public audit oversight, in terms of membership, powers and the content of inspection reports. Based on a large international sample of listed firms from 24 EU countries over the 2005–2013 period, as well as hand-collected information from various sources, significant heterogeneity is identified in the design of public audit oversight across the EU. In particular, almost 46 per cent of the sample regulatory authorities for audit firms consist entirely of non-practitioners or provide overall quality ratings in their inspection reports, while 79 per cent of public oversight bodies have concentrated power.

Multivariate regression analyses using audit fees and three proxies for audit quality reveal a significant increase in audit fees following the adoption of public oversight, specifically in countries where all members of the oversight body are non-practitioners or where the national audit firm regulator has full responsibility for inspection, investigation and discipline. However, contrary to audit fees, there is no evidence to suggest that the quality of audit engagements is affected by specific features of the public oversight system. A possible explanation for this finding is that many aspects of the new inspection regime are largely process- and compliance-driven, with high costs for limited benefits (Boone et al. 2015; Christensen et al. 2016). However, this result may also be due to the inability of commonly-used audit quality proxies to detect any differences in audit quality (DeFond and Zhang 2014). Overall, this study is the first to generate evidence regarding the implications of alternative external audit regulation designs for audit pricing and quality, and contributes to long-standing debate over the relative merits of monitoring by experienced practitioners or by independent non-practitioners.

Having investigated the oversight system at a pan-European level, the study presented in Chapter 4 focuses specifically on the UK. As the FRC provides summary scores for audit quality in its inspection reports, this study examines FRC ratings and measures their costs and benefits for audit firms. First, the impact of rating on audit fees is measured. Using a large sample of UK-listed clients for the period 2008–2016, a significant increase in audit fees is found when an audit firm has a higher proportion of engagements with lower ratings. Specifically, a 10 per cent increase in deficient ratings will generate a 5.33 per cent audit fee premium. A possible explanation for this result is that audit firms may have to expend greater effort and resources to adjust their audit procedures to avoid punishment or other enforcement measures by oversight authorities (e.g. Acito et al. 2013; DeFond and Lennox 2017). In an oligopolistic audit market, the audit firm passes on incremental costs to its clients, which increases audit fees (Lyon and Maher 2005; Boone et al. 2015). This increase is more concentrated among clients with Big 4 audit firms, perhaps because the latter have higher reputational costs and deep pockets that may be targeted by shareholders in litigation claims.

This study also investigates the impact of inspection ratings on audit firm switching, proxied by the likelihood of switching audit firms between years. Unlike for audit fees, no evidence is found to suggest that ratings may affect clients' likelihood of switching audit firms. This indicates that FRC ratings are not perceived by audit committees as a signal of audit quality, and thus do not affect their audit firm appointment decisions.

Finally, the study examines the association between FRC ratings and audit quality, proxied by abnormal accruals, total accruals and the likelihood of issuing a qualified audit opinion. Consistent with the results for audit firm switching, no significant relationship is

found between FRC ratings and audit quality, thus confirming that rating results may not be a signal of audit quality. Possible explanations for this finding are the FRC's lack of expertise and independence, its risk-based inspection approach and its focus on documentation and compliance rather than on a holistic assessment of audit quality (Beattie et al. 2013; Boone et al. 2015).

Overall, this study reveals that unfavourable inspection results may prompt audit firms to undertake more adjustments to their auditing procedures to meet FRC requirements (which will increase the cost of audits), but audit committees may not treat this inspection result seriously, believing that the results may not be credible and do not reflect the general quality of audits. Their opinions are evidenced by a lack of association between inspection ratings and several audit quality proxies. In general, Chapter 4 provides evidence that the audit inspection regime in the UK brings additional costs to both clients and audit firms, while failing to bring corresponding benefits.

Both empirical chapters find an increase in audit pricing with no apparent impact on audit quality in association with the audit inspection practice. This indicates that the inspection regime in Europe may potentially bring additional costs to audit firms and clients, while perhaps not generating corresponding benefits.

The results of this thesis have several implications for policy makers and regulators. First, it provides evidence on POA design regarding membership and power concentration, which are relevant in light of recent developments in Directive 2014 that shed light on the expertise and independence of reviewers and the delegation of oversight powers (2014/56/EU, article 1. para. 24(b); 2014/56/EU, article 32(4)(b)). Specifically, the results of this thesis suggest that it is potentially more efficient to allow more practitioners to

participate in the POA, and to delegate some of the POA's powers to other institutions. Second, this thesis sets out evidence on the costs and benefits of providing overall quality ratings. For POAs that already provide overall quality ratings in their inspection reports (e.g. the FRC), the issues highlighted in this thesis may potentially be helpful in developing further policies and refining their audit inspections in the future. For example, it may be necessary to consider adjusting the traditional risk-based inspection approach, and inspectors may need to pay greater attention to audit outcomes rather than procedural compliance and adequacy. POAs around the world that do not as yet provide overall quality ratings in their inspection reports (e.g. the PCAOB) need to give careful consideration to the aforementioned issues before deciding whether to do so. Overall, the results of this thesis are potentially useful for policy makers and regulators around the world.

This thesis is also subject to limitations. First, as previously discussed, inability to detect any differences in audit quality in both empirical chapters may be attributable to the potentially limited suitability of commonly-used audit quality proxies for measuring the amount of assurance provided by audit firms (DeFond and Zhang 2014). Second, as indicated in Chapter 3, audit fees data from Worldscope refer to both auditing and non-auditing services (NAS); accordingly, it is infeasible to examine the relationship between audit fees and NAS fees as well as the differential impact of inspection ratings on these two measures. Third, in the audit switching analysis, many control variables in the model are found to be insignificant, probably because the small number of observations and small variation in the dependent variable weaken the power of the test. Fourth, in addition to membership, power concentration and transparency, other design features of POAs may potentially affect audit firms' or clients' incentives. Fifth, this thesis focuses on the

consequences of public oversight for audit pricing, audit firm switching and audit quality; it does not examine capital market consequences, as does at least one previous US study which claims that the introduction of the PCAOB has affected the capital market (Gipper et al. 2015). Finally, this dissertation focuses specifically on Europe. Whether the results can be applied to other institutional settings around the world (e.g. emerging markets) is as yet unknown. These issues provide a useful starting point for further research.

Appendix 1: Variable definitions for pan-European study

(with Worldscope item numbers in square parentheses)

Dependent variables	
AUDFEE_RAW	Audit fees in thousands of US$ [WS01801].
AUDFEE	Natural log of audit fees in thousands of US$ [WS01801].
AWCA	Abnormal working capital accruals scaled by lagged total assets [WC02999] based on DeFond and Park (2001). Abnormal working capital accruals are calculated as Working Capital$_t$ – (Working Capital$_{t-1}$/Sales$_{t-1}$ [WC01001] * Sales$_t$ [WC01001]). Working Capital equals (current assets [WC02201] – cash and short term investment [WC02001]) – (current liability [WC03101] – short-term debt and current portion of long-term debt [WC03051]).
OPINION	Dummy variable that equals 1 if the firm receives a qualified audit opinion [WS07546], and 0 otherwise.
Variables of interest	
MEMBERSHIP	Dummy variable referring to firms in countries where all POA board members are non-practitioners (POA composition). It equals 1 for all observations ending on or after the national law became effective, and 0 otherwise.
POWER	Dummy variable referring to firms in countries where the POA is responsible for all three functions of inspection, investigation and disciplinary (POA power concentration). It equals 1 for all observations ending on or after the national law became effective, and 0 otherwise.
RATING	Dummy variable referring to firms in countries where inspection reports provide overall ratings of the quality of the audit firms being reviewed (content of inspection reports). It equals 1 for all observations ending on or after the national law became effective, and 0 otherwise.
Firm-specific controls	
AGE	The natural log of the age of the client, which is the number of years since the client was listed [BDATE].
BIG4	Dummy variable that equals 1 if the firm uses one of the Big 4 audit firms [WS07800], and 0 otherwise.
BM	Book value of equity [WC03501] scaled by market value of equity [WC08001].
BUSY	Dummy variable that equals 1 for fiscal year ending 31 December [WS05350], and 0 otherwise.
CFO	Cash flow from operations [WC04860] scaled by total assets [WC02999].
FORSALES	Ratio of foreign sales to total sales [WS08731].
INVREC	Ratio of the sum of inventories [WS02101] and receivables [WS02051] to total assets [WS02999].
LEVERAGE	Ratio of long-term debt [WS03251] to total assets [WS02999].
LIQUIDITY	Ratio of current assets [WS02201] to current liabilities [WS03101].

LITIGIOUS	Dummy variable that equals 1 if SIC [WS07021, WS07022, WS07023] is 2833–2836, 3570–3577, 3600–3674, 5200–5961, or 7370–7374 (biotechnology, computers, electronics or retailing), and 0 otherwise.
LOSS	Dummy variable that equals 1 if the firm reports a net loss [WS01651] in the current year, and 0 otherwise.
NBS	Natural log of 1 plus the number of business segments [WS19501, WS19511, WS19521, WS19531, WS19541, WS19551, WS19561, WS19571, WS19581, WS19591].
NGS	Natural log of 1 plus the number of geographical segments [WS19601, WS19611, WS19621, WS19631, WS19641, WS19651, WS19661, WS19671, WS19681, WS19691].
ROA	Ratio of net income before extraordinary items [WC01551] to total assets [WS02999].
SALES_GROWTH	Sales increase (or decrease) from year *t*-1 to year *t* scaled by lagged sales [WC01001].
SIZE	Natural log of total assets in thousands of US$ [WS07230].
Country-specific controls	
GDP	Gross domestic product in current US$ (World Bank). The natural log of GDP is used in the empirical analysis.
GDP_PER_CAP	Gross domestic product per capita in current US$ (World Bank).
HHI	The Herfindahl index, calculated for each country and year as HHI=$\sum_{i=1}^{N}[s_i/S]^2$, where *N* is the total number of all audit firms within a country, *s* is the size of each audit firm measured by total audit fees earned [WS01801], and *S* is the size of the total audit market of the country. Higher values denote higher market concentration.
RULE	The rule of law from World Bank Governance Indicators, based on Kaufmann et al. (2009). Higher values reflect greater legal enforcement.

Appendix 2: Data sources for construction of POA variables

Country	MEMBERSHIP	POWER	RATING	LAW/EFFECTIVE YEAR
Austria	IFIAR (2013) Correspondence via email	IFIAR (2013) EC (2010)	Correspondence via email	IFIAR(2013)
Belgium	IFIAR (2013)	IFIAR (2013) EC (2010)	POA Annual Report (2012) Correspondence via telephone	IFIAR(2013)
Bulgaria	IFIAR (2013) POA website[40]	IFIAR (2013) EC (2010)	Correspondence via email	IFIAR(2013)
Czech Republic	IFIAR (2014) Correspondence via email	EC(2010)	Correspondence via email	IFIAR(2014)
Denmark	IFIAR (2013) POA and LinkedIn websites[41]	IFIAR (2013) EC (2010) DCCA (2011)	Correspondence via email	DCCA (2011)
Finland	IFIAR (2013) Correspondence via email	IFIAR (2013) EC (2010)	Correspondence via email	IFIAR (2013)
France	IFIAR (2013)	IFIAR (2013) EC (2010)	Correspondence via email	IFIAR (2013)
Germany	IFIAR (2013)	IFIAR (2013) EC (2010)	Correspondence via email	IFIAR (2013)
Greece	IFIAR (2013) Correspondence via email	IFIAR (2013) EC (2010)	Correspondence via email	IFIAR (2013)
Hungary	IFIAR (2013)	EC (2010)	Correspondence via telephone	IFIAR (2013)
Iceland	POA website and other online sources[42]	POA website	Correspondence via email	POA website[43]
Ireland	IFIAR (2013) POA website[44]	IFIAR (2013) EC (2010)	POA Annual Report (2011)	IFIAR (2013) POA Annual Report (2006)
Italy	IFIAR (2013) Correspondence via email	IFIAR (2013) EC (2010)	Correspondence via email	IFIAR (2013)
Lithuania	IFIAR (2013)	IFIAR (2013) EC (2010)	Correspondence via email	IFIAR (2013)

[40] The relevant link is: http://cposa.bg/en/index.php/aboutthecommission/membership.
[41] The relevant links are: https://danishbusinessauthority.dk/who-we-are and https://www.linkedin.com (exact LinkedIn links available on request).
[42] The relevant link is: http://www.endurskodendarad.is/ (the other online links are available on request).
[43] The relevant link is: http://www.althingi.is/lagas/144a/2008079.html.
[44] The relevant link is: http://www.iaasa.ie/About-IAASA/Governance/Board-of-Directors.

Country	MEMBERSHIP	POWER	RATING	LAW/EFFECTIVE YEAR
Luxembourg	IFIAR (2013) Correspondence via email	IFIAR (2013) EC (2010)	Correspondence via email	IFIAR (2013)
Netherlands	IFIAR (2013) Correspondence via email	IFIAR (2013) EC (2010)	Correspondence via email	IFIAR (2013)
Norway	IFIAR (2013)	IFIAR (2013) EC (2010)	Correspondence via email	IFIAR (2013)
Poland	IFIAR (2013) Correspondence via email	EC (2010)	Correspondence via email	IFIAR (2013)
Portugal	IFIAR (2013) POA website and other online sources[45]	IFIAR (2013) EC (2010)	Correspondence via email	IFIAR (2013)
Slovenia	IFIAR (2014) Correspondence via email	EC (2010)	Correspondence via email	IFIAR (2013)
Slovakia	IFIAR (2013)	IFIAR (2013) EC (2010)	Correspondence via email	IFIAR (2013)
Spain	IFIAR (2013) POA website[46] Correspondence via email	IFIAR (2013) EC (2010)	Correspondence via email	IFIAR (2013) Correspondence via email
Sweden	IFIAR (2013)	IFIAR (2013) EC (2010)	Correspondence via telephone	IFIAR (2013)
UK	IFIAR (2013) Correspondence via email	IFIAR (2013) EC (2010) FRC (2011)	Correspondence via email	IFIAR (2013) FRC (2011)

[45] The relevant links are: http://www.cnsa.pt/ and http://www.vasroc.pt/uploads/docs/CV_VBA.pdf.
[46] The relevant link is: http://www.icac.meh.es/.

Appendix 3: Public oversight systems in the EU

Country	POA	MEMBERSHIP	INSPECTION	INVESTIGATION	DISCIPLINE	RATING	LAW/EFFECTIVE YEAR
Austria	Austrian Auditors Supervisory Authority (ASA)	Only non-practitioners	ASA	ASA	Austrian Chamber of Certified Public Accountants	Yes[47]	Quality Control for Statutory Audits Act/2006
Belgium	Chambre de Renvoi et de Mise en Etat (CRME)	Only non-practitioners	CRME Institute of Company Auditors (ICA)	CRME[48] ICA	Disciplinary Commission Commission of Appeal	Yes[49]	Royal Decree of 21 April 2007 Royal Decree of 25 April 2007
Bulgaria	Commission for Public Oversight of Statutory Auditors (CPOSA)	Mixed	CPOSA	CPOSA	CPOSA Institute of Certified Public Accountants	Yes[50]	Independent Financial Audit Law/2008

[47] Rating scale: satisfactory, satisfactory with comments, and unsatisfactory.

[48] Investigations are usually led by the ICA; however, the CRME may decide to appoint a special expert to investigate a case instead of the professional body (IFIAR 2013).

[49] Rating scale: satisfactory, satisfactory with minor weaknesses, recommendations to be addressed in a given period of time, new quality control in the following year, and refer to disciplinary court.

[50] Rating scale in the form of A, B, C and D.

Country	POA	MEMBERSHIP	INSPECTION	INVESTIGATION	DISCIPLINE	RATING	LAW/EFFECTIVE YEAR
Czech Republic	Audit Public Oversight Council	Mixed	Audit Public Oversight Council Chamber of Auditors of the Czech Republic	Audit Public Oversight Council Chamber of Auditors of the Czech Republic	Audit Public Oversight Council Chamber of Auditors of the Czech Republic	No	Act n.93 Coll. on Auditors/2009
Denmark	Danish Commerce and Companies Agency (DCCA)[51]	Only non-practitioners	Danish Supervisory Authority on Auditing (DSAA)[52]	DCCA	Disciplinary Board on Auditors	No	Danish Act on Approved Auditors and Audit Firms n.468/2008
Finland	Auditing Board of the Central Chamber of Commerce (AB3C)	Mixed	AB3C	AB3C	AB3C Auditing Board of the State	No	Auditing Act n.459/2007

[51] The DCCA merged with two other agencies to become the Danish Business Authority with effect from 1 January 2012 (IFIAR 2013).

[52] The DCCA provides only secretarial assistance to the DSAA (Barfoed 2011).

Country	POA	MEMBERSHIP	INSPECTION	INVESTIGATION	DISCIPLINE	RATING	LAW/EFFECTIVE YEAR
France	High Council for Statutory Audit (H3C)	Mixed	H3C[53]	Ministry of Justice Financial Markets Authority	Independent Regional Disciplinary Chambers H3C may be referred to in case of appeals	No	Financial Security Law/2003
Germany	Auditor Oversight Commission (AOC)	Only non-practitioners	AOC	AOC WPK[54]	AOC WPK	No	Auditor Oversight Act/2005
Greece	Accounting & Auditing Oversight Board	Only non-practitioners	Accounting and Auditing Oversight Board	Accounting and Auditing Oversight Board	Accounting and Auditing Oversight Board	No	Law n.3148/2003
Hungary	Auditors' Public Oversight Committee (APOC)	Mixed	APOC Chamber of Hungarian Auditors	APOC Chamber of Hungarian Auditors	APOC Chamber of Hungarian Auditors	Yes[55]	Act LXXV/2008
Iceland	Auditors Council	Mixed	Auditors Council Institute of Chartered Accountants	Auditors Council	Auditors Council Ministry of Industries and Innovation	Yes[56]	Auditing Act/2009

[53] H3C may also delegate some inspections to the Compagnie Nationale des Commissaires aux Comptes (CNCC, National Company of Auditors) or the Compagnie Régionale des Commissaires aux Comptes de Paris (CRCC, Regional Company of Statutory Auditors of Paris) (EC 2010).

[54] WPK is the Chamber of Public Accountants.

[55] Rating scale in the form of A, B, C and D.

[56] Rating scale: satisfactory with no comments, satisfactory with comments, and non-satisfactory.

Country	POA	MEMBERSHIP	INSPECTION	INVESTIGATION	DISCIPLINE	RATING	LAW/EFFECTIVE YEAR
Ireland	Irish Auditing & Accounting Supervisory Authority (IAASA)	Mixed	IAASA ACCA, ICAI, ICAEW, ICAS, CPA, IIPA[57]	IAASA ACCA, ICAI, ICAEW, ICAS, CPA, IIPA	IAASA ACCA, ICAI, ICAEW, ICAS, CPA, IIPA	Yes[58]	Companies (Auditing and Accounting) Act/2006
Italy	Commissione Nazionale per le Società e la Borsa (CONSOB)	Only non-practitioners	CONSOB	CONSOB	CONSOB	No	Legislative Decree n.58/2007[59]
Lithuania	Authority of Audit and Accounting (AAA)	Mixed	AAA The Lithuanian Chamber of Auditors	AAA	AAA The Lithuanian Chamber of Auditors	Yes[60]	Law of the Republic of Lithuania on Audit/2008
Luxembourg	Commission de Surveillance du Secteur Financier (CSSF)	Only non-practitioners	CSSF	CSSF	CSSF	No	Law of 18 December/2009

[57] ACCA is the Association of Chartered Certified Accountants; ICAI is the Institute of Chartered Accountants in Ireland; ICAEW is the Institute of Chartered Accountants in England and Wales; ICAS is the Institute of Chartered Accountants of Scotland; CPA is the Institute of Certified Public Accountants in Ireland; and IIPA is the Institute of Incorporated Public Accountants.

[58] The rating scale varies. In general, it is in the form of A, B, C and D.

[59] Legislative Decree n.58 ('The Consolidated Law on Finance' and following amendments) and its implementation measures constitute the main regulatory framework for CONSOB's oversight activity. Its oversight of auditors and audit firms is further regulated by Legislative Decree n.39/2010, issued in order to fully implement Directive 2006/43/EC on statutory audits.

[60] Rating scale: no deficiencies, deficiencies, and material deficiencies.

Country	POA	MEMBERSHIP	INSPECTION	INVESTIGATION	DISCIPLINE	RATING	LAW/EFFECTIVE YEAR
Netherlands	Authority for the Financial Markets (AFM)	Only non-practitioners	AFM	AFM	AFM (for audit firms) Accountantskamer (Disciplinary Court for statutory auditors)	Yes[61]	Audit Firm Oversight Act/2006
Norway	Financial Supervisory Authority	Only non-practitioners	Financial Supervisory Authority[62]	Financial Supervisory Authority	Financial Supervisory Authority	No	Financial Supervision Act/1992
Poland	Audit Oversight Commission	Mixed	Audit Oversight Commission National Chamber of Statutory Auditors (NCSA)	Audit Oversight Commission	Audit Oversight Commission NCSA	No	The Act/2009
Portugal	Conselho Nacional de Supervisão de Auditoria (CNSA)	Mixed	CNSA Ordem dos Revisores Oficiais de Contas (OROC)[63]	CNSA	CNSA OROC Comissão do Mercado de Valores Mobiliários (CMVM)[64]	Yes[65]	Decree-Law n.225/2009

[61] Rating scale: inadequate and not inadequate.

[62] All inspections of audit firms with listed firm engagements are performed by the FSA. The FSA also inspects statutory auditors who are not members of the Norwegian Institute of Public Accountants. For members of the institute, the FSA has issued guidelines on cooperation with the Institute where it performs quality assurance reviews of individual auditors. Nevertheless, the Institute performs its own additional inspections of members when deemed necessary (IFIAR 2013).

[63] OROC is the Portuguese Institute of Statutory Auditors.

[64] CMVM is the Portuguese Securities Market Commission.

[65] Rating scale: nothing to refer, with minor observations/recommendations, with relevant observations/recommendations, and unsatisfactory.

Country	POA	MEMBERSHIP	INSPECTION	INVESTIGATION	DISCIPLINE	RATING	LAW/EFFECTIVE YEAR
Slovakia	Audit Oversight Authority	Mixed	Audit Oversight Authority Slovak Chamber of Auditors	Audit Oversight Authority Slovak Chamber of Auditors	Audit Oversight Authority Slovak Chamber of Auditors	Yes[66]	Act n.540 Coll. on Auditors, Audit and Oversight of Audit/2007
Slovenia	Agency for Public Oversight of Auditing (APOA)	Only non-practitioners	APOA Slovenian Institute for Auditing	APOA Slovenian Institute for Auditing	APOA	No	Auditing Act/2008
Spain	Accounting and Auditing Institute	Mixed	Accounting and Auditing Institute	Accounting and Auditing Institute	Accounting and Auditing Institute	No	Royal Legislative Decree/2011
Sweden	Supervisory Board of Public Accountants	Mixed	Supervisory Board of Public Accountants	Supervisory Board of Public Accountants	Supervisory Board of Public Accountants	No	Auditors Act/2001:883
UK	Professional Oversight Board (POB), part of the Financial Reporting Council (FRC)[67]	Only non-practitioners	Audit Inspection Unit (AIU) under supervision of POB	Accounting and Actuarial Discipline Board (AADB)[68]	Accounting and Actuarial Discipline Board (AADB)	Yes[69]	Company Act/2004

[66] Rating scale: C1, C2, C3 and C4 for assessment of organisation of activities; D1, D2, D3 and D4 for assessment of implementation of auditing standards.
[67] Following a major restructuring in 2013, public audit oversight falls under the direct remit of the FRC and its Conduct Committee.
[68] AADB is a separate body (part of the FRC) that does not operate under the supervision of POB (FRC 2011).
[69] Rating scale: Grade 1 - good; Grade 2 - limited improvements required; Grade 2b - improvements required; and Grade 4 - significant improvements required.

Appendix 4: Variable definitions for UK study

(with Worldscope item numbers in square parentheses)

Dependent variables	
AUDFEE_RAW	Audit fees in thousands of British pounds [WS01801].
AUDFEE	Natural log of audit fees in thousands of British pounds [WS01801].
SWITCH	Equal to 1 if a client changed audit firm between the previous (*t*-1) and current (*t*) year, and 0 otherwise.
AWCA	Abnormal working capital accruals scaled by lagged total assets [WC02999] based on DeFond and Park (2001). Abnormal working capital accruals are calculated as Working $Capital_t$ – (Working $Capital_{t-1}$/$Sales_{t-1}$ [WC01001] * $Sales_t$ [WC01001]. Working Capital is (current assets [WC02201] – cash and short term investment [WC02001]) – (current liability [WC03101] – short-term debt and current portion of long-term debt [WC03051]).
TOT_ACCRUALS	The difference between net income before extraordinary items [WC01551] and cash flow from operations [WC04860] scaled by lagged total assets [WC02999].
OPINION	Dummy variable that equals 1 if the client receives a qualified audit opinion [WS07546], and 0 otherwise.
Variables of interest	
PROC3	The proportion of engagements rated 'Significant improvements required' (Category 3) over total engagements reviewed for each audit firm for a specific year.
DIFFERENCE	A dummy variable equal to 1 if *PROC3* is above or equal to the mean value of *PROC3* based on all audit firms and years in the sample, and 0 otherwise.
PROC2A	The proportion of audit engagements with category 2A ratings (good with limited improvements required) in the total audit engagements reviewed for a specific year.
PROC2B	The proportion of audit engagements with category 2B ratings (improvements required) in the total audit engagements reviewed for a specific year.
PROC3_LAGGED	The proportion of engagements rated 'significant improvements required' (Category 3) over total engagements reviewed for each audit firm for the fiscal period two years previously.
PROC3_BIG4	Conditional variable: *PROC3 * Big4.*
PROC3_NON-BIG4	Conditional variable: *PROC3 * (1 - Big4).*
Firm-specific controls	
BIG4	Dummy variable that equals 1 if the client uses one of the Big 4 audit firms, and 0 otherwise.
SIZE	Natural log of total assets in thousands of British pounds [WS02999].
LEVERAGE	Ratio of long-term debt [WS03251] to total assets [WS02999].

ROA	Ratio of net income before extraordinary items [WC01551] to total assets [WS02999].
LOSS	Dummy variable that equals 1 if the client reports a net loss [WS01651] in the current year, and 0 otherwise.
LIQUIDITY	Ratio of current assets [WS02201] to current liabilities [WS03101].
CFO	Cash flow from operations [WC04860] scaled by total assets [WC02999].
BM	Book value of equity [WC03501] scaled by market value of equity [WC08001].
BUSY	Dummy variable that equals 1 for fiscal year ending 31 December [WS05350], and 0 otherwise.
NBS	Natural log of 1 plus the number of business segments [WS19501, WS19511, WS19521, WS19531, WS19541, WS19551, WS19561, WS19571, WS19581, WS19591].
NGS	Natural log of 1 plus the number of geographical segments [WS19601, WS19611, WS19621, WS19631, WS19641, WS19651, WS19661, WS19671, WS19681, WS19691].
FORSALES	Ratio of foreign sales to total sales [WS08731].
INVREC	Ratio of the sum of inventories [WS02101] and receivables [WS02051] to total assets [WS02999].
SALES_GROWTH	Sales increase (or decrease) from year *t*-1 to year *t* scaled by lagged sales [WC01001].
LITIGIOUS	Dummy variable that equals 1 if SIC [WS07021, WS07022, WS07023] is 2833–2836, 3570–3577, 3600–3674, 5200–5961, or 7370–7374 (biotechnology, computers, electronics or retailing), and 0 otherwise.
AGE	The natural log of the age of the client, which is the number of years since the client was listed [BDATE].
CASH	Money available for use in the normal operations of the company [WS02003].
MISMATCH	1 if a client firm is mismatched with the type of audit firm (Big4 or not) that it is using, and 0 otherwise. The measure is estimated separately for each sample year. The estimation procedure is based on Shu (2000). The data necessary to measure this variable (i.e. total assets [WS02999], goodwill/cost in excess of assets purchased [WS18280], external financing [WS04500], net income before extraordinary items/preferred dividends [WS01551], book value of equity [WC03501] and market value of equity [WC08001]) were collected from Worldscope.

Bibliography

Abbott, L.J., K. Gunny, and T.C. Zhang. 2012. When the PCAOB talks, who listens? Evidence from stakeholder reaction to GAAP-deficient PCAOB inspection reports of small auditors. *Auditing: A Journal of Practice & Theory*, 32(2): 1–31.

Abernathy, J.L., M. Barnes, and C.M. Stefaniak. 2013. A summary of 10 years of PCAOB research: What have we learned? *Journal of Accounting Literature*, 32(1): 30–60.

Acito, A.A., C.E. Hogan, and R.D. Mergenthaler. 2013. The effects of PCAOB inspections on auditor–client relationships. Working paper. Available at: https://fisher.osu.edu/supplements/10/14065/AAcito_paper.pdf.

Agrawal, A., S. Chadha, and M. Chen. 2006. Who is afraid of Reg FD? The behavior and performance of sell-side analysts following the SEC's fair disclosure rules. *Journal of Business*, 79(6): 2811–2834.

Ahmed, A., M. Neel, and D. Wang. 2013. Does mandatory adoption of IFRS improve accounting quality? Preliminary evidence. *Contemporary Accounting Research*, 30(4): 1344–1372.

Akhigbe, A., and A. Martin. 2006. Valuation impact of Sarbanes-Oxley: Evidence from disclosure and governance within the financial services industry. *Journal of Banking and Finance*, 30(3): 989–1006.

Albuquerque, A., and J. Zhu. 2013. Has Section 404 of the Sarbanes-Oxley Act discouraged corporate risk-taking? New evidence from a natural experiment. Working paper. doi: 10.2139/ssrn.3049232.

Alexander, C., S. Bauguess, G. Bernile, Y.-H.A. Lee, and J. Marietta-Westberg. 2013. Economic effects of SOX Section 404 compliance: A corporate insider perspective. *Journal of Accounting and Economics*, 56(2–3): 267–290.

Anantharaman, D. 2007. How objective is peer review? Evidence from self-regulation of the accounting profession. Working paper. doi: 10.2139/ssrn.1015810.

Anantharaman, D. 2012. Comparing self-regulation and statutory regulation: Evidence from the accounting profession. *Accounting, Organizations and Society,* 37(2): 55–77.

Aobdia, D., and N. Shroff. 2017. Regulatory oversight and auditor market share. *Journal of Accounting and Economics*, 63(2–3): 262–287.

Armstrong, C., R. Guay, and J. Weber. 2010. The role of information and financial reporting in corporate governance and debt contracting. *Journal of Accounting and Economics*, 50(2–3): 179–234.

Arrow, K. 1971. *Essays in the Theory of Risk Bearing*. Chicago, IL: Markham.

Ashbaugh, H., R. LaFond, and B. Mayhew. 2003. Do nonaudit services compromise auditor independence? Further evidence. *The Accounting Review*, 78(3): 611–639.

Audit Council. 2017. Law and order. Audit Council [website], Reykjavík, Iceland. Available at: http://www.endurskodendarad.is/logogreglur/&usg=ALkJrhiL4WdhVAUgU5 Fc0R7GxwO1K5D_FQ.

Bailey, W., G. Karolyi, and C. Salva. 2006. The economic consequences of increased disclosure: Evidence from international cross-listings. *Journal of Financial Economics*, 81(1): 175–213.

Ball, R. 2009. Market and political/regulatory perspectives on the recent accounting scandals. *Journal of Accounting Research*, 47(2): 277–323.

Ball, R., X. Li, and L. Shivakumar. 2015. Contractibility and transparency of financial statement information prepared under IFRS: Evidence from debt contracts around IFRS adoption. *Journal of Accounting Research*, 53(5): 915–963.

Barfoed, V.S. 2011. Public oversight in Denmark. Distance Learning Event on Public Oversight, Danish Commerce and Companies Agency, Copenhagen, Denmark. Available at: http://www.worldbank.org/eca/vdo/vienna/gdlnaocop19apr2011/vibeke_sylvest_barfoed_po_in_denmark_english.pdf.

Bargeron, L., K. Lehn, and C. Zutter. 2010. Sarbanes-Oxley and corporate risk-taking. *Journal of Accounting and Economics*, 49(1–2): 34–52.

Barth, M., W. Landsman, M. Lang, and C. Williams. 2012. Are IFRS-based and US GAAP-based accounting amounts comparable? *Journal of Accounting and Economics*, 54(1): 68–93.

Barton, J. 2005. Who cares about auditor reputation? *Contemporary Accounting Research*, 22(3): 549–586.

Bartov, E., and D. Cohen. 2009. The 'numbers game' in the pre- and post-Sarbanes-Oxley eras. *Journal of Accounting, Auditing and Finance*, 24(4): 505–534.

Battalio, R., B. Hatch, and T. Loughran. 2011. Who benefited from the disclosure mandates of the 1964 Securities Acts amendments? *Journal of Corporate Finance*, 17(4): 1047–1063.

Beattie, V., S. Fearnley, and T. Hines. 2013. Perceptions of factors affecting audit quality in the post-SOX UK regulatory environment. *Accounting and Business Research*, 43(1): 56–81.

Becker, C.L., M.L. DeFond, J. Jiambalvo, and K.R. Subramanyam. 1998. The effect of audit quality on earnings management. *Contemporary Accounting Research*, 15(1): 1–24.

Bishop, C.C., D.R. Hermanson, and R.W. Houston. 2013. PCAOB inspections of international audit firms: Initial evidence. *International Journal of Auditing*, 17: 1–18.

Boone, J.P., I.K. Khurana, and K.K. Raman. 2015. Did the 2007 PCAOB disciplinary order against Deloitte impose actual costs on the firm or improve its audit quality? *The Accounting Review*, 90(2): 405–441.

Brown, A. 2016. Institutional differences and international private debt markets: A test using mandatory IFRS adoption. *Journal of Accounting Research*, 54(3): 679–723.

Bushee, B., and C. Leuz. 2005. Economic consequences of SEC disclosure regulation: Evidence from the OTC bulletin board. *Journal of Accounting and Economics*, 39(2): 233–264.

Campbell, T., and K. Houghton. 2005. *Ethics and Auditing*. Canberra, Australia: ANU E-Press.

Capkun, V., D. Collins, and T. Jeanjean. 2012. Does adoption of IAS/IFRS deter earnings management? Working paper. doi: 10.2139/ssrn.1015810.

Caramanis, C., E. Dedoulis, and S. Leventis. 2015. Transplanting Anglo-American accounting oversight boards to a diverse institutional context. *Accounting, Organizations and Society*, 42: 12–31.

Carcello, J.V., C. Hollingsworth, and S.A. Mastrolia. 2011. The effect of PCAOB inspections on Big 4 audit quality. *Research in Accounting Regulation*, 23(2): 85–96.

Carcello, J.V., and C. Li. 2013. Costs and benefits of requiring an engagement partner signature: Recent experience in the United Kingdom. *The Accounting Review*, 88(5): 1511–1546.

Carey, P., and R. Simnett. 2006. Audit partner tenure and audit quality. *The Accounting Review*, 81(3): 653–676.

Carson, E., R. Simnett, and A. Vaanstraelen. 2017. The effect of national inspection regimes on audit quality. Working paper. doi: 10.2139/ssrn.3049828.

Casterella, J.R., K.L. Jensen, and W.R. Knechel. 2009. Is self-regulated peer review effective at signaling audit quality? *The Accounting Review*, 84(3): 713–735.

CFRR. 2014. *Public Oversight Function: Institutional Arrangements and Activities*. Vienna, Austria: World Bank Centre for Financial Reporting Reform. Available at http://siteresources.worldbank.org/EXTCENFINREPREF/Resources/4152117-1380634652337/9346897-1413295225166/aocop06.pdf.

Chen, T., J. Harford, and C. Lin. 2015. Do analysts matter for governance? Evidence from natural experiments. *Journal of Financial Economics*, 115(2): 383–410.

Chen, Z., S. Dhaliwal, and H. Xie. 2010. Regulation Fair Disclosure and the cost of equity capital. *Review of Accounting Studies*, 15(1): 106–144.

Cheon, Y.S., D. Dhaliwal, M. Hwang, and M. Kim. 2016. Do regulator inspections of audit firms discern audit quality? Evidence from Korean regulator inspections. *Asia-Pacific Journal of Accounting & Economics*, 24(3–4): 272–301.

Chhaochharia, V., and Y. Grinstein. 2007. Corporate governance and firm value: The impact of the 2002 governance rules. *Journal of Finance*, 62(4): 1789–1825.

Choi, J.H., J.B. Kim, X.H. Liu, and D.A. Simunic. 2008. Audit pricing, legal liability regimes, and Big 4 premiums: Theory and cross-country evidence. *Contemporary Accounting Research*, 25(1): 55–99.

Choi, J.H., J.B. Kim, X.H. Liu, and D.A. Simunic. 2009. Cross-listing audit fee premiums: Theory and evidence. *The Accounting Review,* 84(5): 1429–1463.

Christensen, B.E., S.M. Glover, T.C. Omer, and M.K. Shelley. 2016. Understanding audit quality: Insights from audit professionals and investors. *Contemporary Accounting Research*, 33(4): 1648–1684.

Christensen, H.B., L. Hail, and C. Leuz. 2013. Mandatory IFRS reporting and changes in enforcement. *Journal of Accounting and Economics*, 56(2–3): 147–177.

Cohen, D., A. Dey, and T. Lys. 2008. Real and accrual-based earnings management in the pre- and post-Sarbanes-Oxley periods. *The Accounting Review*, 83(3): 757–787.

CRME. 2012. *Annual Report 2012*. Brussels, Belgium: Chambre de Renvoi et de Mise en Etat. Available at: https://www.ibr-ire.be/fr/l_institut/actualites/actualites_ire/Documents/Rapport-annuel-CRME-2012.pdf.

Daines, R., and C. Jones. 2012. Truth or consequences: Mandatory disclosure impact of the 1934 Act. Working paper. Available at: https://law.stanford.edu/publications/truth-or-consequences-mandatory-disclosure-and-the-impact-of-the-1934-act/

Dao, M., K. Raghunandan, and D.V. Rama. 2012. Shareholder voting on auditor selection, audit fees, and audit quality. *The Accounting Review,* 87(1): 149–171.

Daske, H., H. Luzi, L. Christian, and V. Rodrigo. 2008. Mandatory IFRS reporting around the world: Early evidence on the economic consequences. *Journal of Accounting Research,* 46(5): 1085–1142.

De George, E.T., C. Ferguson, and N. Spear. 2013. How much does IFRS cost? IFRS adoption and audit fees. *The Accounting Review*, 88(2): 429–462.

De George, E.T., X. Li, and L. Shivakumar. 2016. A review of the IFRS literature. *Review of Accounting Studies,* 21(3): 898–1004.

DeAngelo, L.E. 1981. Auditor size and audit quality. *Journal of Accounting and Economics,* 3(3): 183–199.

DeFond, M.L. 2010. How should the auditors be audited? Comparing the PCAOB inspections with the AICPA peer reviews. *Journal of Accounting and Economics*, 49(1–2): 104–108.

DeFond, M.L. 2012. The consequences of protecting audit partners' personal assets from the threat of liability: A discussion. *Journal of Accounting and Economics*, 54(2–3): 174–179.

DeFond, M.L., and C.W. Park. 2001. The reversal of abnormal accruals and the market valuation of earnings surprises. *The Accounting Review*, 76(3): 375–404.

DeFond, M., and C. Lennox. 2011. The effect of SOX on small auditor exits and audit quality. *Journal of Accounting and Economics*, 52(1): 21–40.

DeFond, M., and C. Lennox. 2017. Do PCAOB inspections improve the quality of internal control audits? *Journal of Accounting Research*, 55(3): 591–627.

DeFond, M.L., C.Y. Lim, and Y. Zang. 2016. Client conservatism and auditor–client contracting. *The Accounting Review*, 91(1): 69–98.

DeFond, M., and J.Y. Zhang. 2014. A review of archival auditing research. *Journal of Accounting and Economics*, 58(2–3): 275–326.

Duarte, J., X. Han, J. Harford, and L. Young. 2008. Information asymmetry, information dissemination and the effect of Regulation FD on the cost of capital. *Journal of Financial Economics*, 87(1): 24–44.

Durham European Law Institute. 2013. The proposal for a new EU Regulation on statutory audit: Risks and benefits. *DELI Blog*, 19 November. Available at: https://delilawblog.wordpress.com/2013/11/19/the-proposal-for-a-new-eu-regulation-on-statutory-audit-risks-and-benefits/.

Dyck, A., A. Morse, and L. Zingales. 2010. Who blows the whistle on corporate fraud? *Journal of Finance*, 65(6): 2213–2253.

EC. 2000. *Commission Recommendation on Quality Assurance for the Statutory Audit in the European Union: Minimum Requirements*. Brussels, Belgium: European Commission.

EC. 2001. *Commission Recommendation of 15 November 2000 on Quality Assurance for the Statutory Audit in the European Union: Minimum Requirements*. Brussels,

Belgium: European Commission. Available at: http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32001H0256&from=EN.

EC. 2003a. Communication from the Commission to the Council and the European Parliament reinforcing statutory audit in the EU. *Official Journal of the European Union*, 2 October. Available at: http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:C2003/236/02& from=EN.

EC. 2003b. Note to members of the EU Committee on auditing subject: Principles for public oversight on the EU audit profession. DG Markt G4/2003/04, International Market DG, Financial Markets, Accounting and Auditing, Brussels, Belgium.

EC. 2006. *Directive 2006/43/EC of the European Parliament and of the Council of 17 May 2006 on Statutory Audits of Annual Accounts and Consolidated Accounts*. Brussels, Belgium: European Commission. Available at: http://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=CONSLEG:2006L0043:20080321:EN:PDF.

EC. 2008. *Recommendation 2008/362/EC of 6 May 2008 on External Quality Assurance for Statutory Auditors and Audit Firms Auditing Public Interest Entities*. Brussels, Belgium: European Commission. Available at: http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32008H0362.

EC. 2010. *Competent Authorities for the Tasks Provided for in the Statutory Audit Directive (2006/43/EC).* Brussels, Belgium: European Commission. Available at http://ec.europa.eu/internal_market/auditing/docs/dir/100201_competent_authorities_SAD_en.pdf.

EC. 2014a. *Directive 2014/56/EU of the European Parliament and of the Council of 16 April 2014 Amending Directive 2006/43/EC on Statutory Audits of Annual Accounts and Consolidated Accounts*. Brussels, Belgium: European Commission. Available at: http://eur-lex.europa.eu/legalcontent/EN/TXT/PDF/?uri=CELEX:32014L0056&from=EN.

EC. 2014b. *Regulation (EU) No 537/2014 of the European Parliament and of the Council of 16 April 2014 on Specific Requirements Regarding Statutory Audit of Public-Interest Entities and Repealing Commission Decision 2005/909/EC*.

Brussels, Belgium: European Commission. Available at: http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014R0537 &from=EN.

EFAA. 2007. *Auditing*. Brussels, Belgium: European Federation of Accountants and Auditors for SMEs. Available at: http://www.efaa.com/policy-areas/auditing/auditing.html.

Eleswarapu, V., R. Thompson, and K. Venkataraman. 2004. The impact of Regulation Fair Disclosure: Trading costs and information asymmetry. *Journal of Financial and Quantitative Analysis*, 39(2): 209–225.

FEE. 2006. *Quality Assurance Arrangements Across Europe*. Brussels, Belgium: Fédération des Experts Comptables Européens. Available at http://www.fee.be/images/publications/auditing/Quality_Assurance_Arrangements_Across_Europe_0612181200761426.pdf.

FEE. 2008. *Fact Sheet: Quality Assurance for Statutory Audit*. Brussels, Belgium: Fédération des Experts Comptables Européens.

FEE. 2014. *EU Directive on Statutory Audits of Annual and Consolidated Accounts and EU Regulation on Statutory Audit of Public Interest Entities*. Brussels, Belgium: Fédération des Experts Comptables Européens. Available at: https://www.accountancyeurope.eu/wp-content/uploads/Factsheet_Audit_Policy_1404.pdf.

FEE. 2018. *Organisation of the Public Oversight of the Audit Profession in Europe*. Brussels, Belgium: Fédération des Experts Comptables Européens. Available at: https://www.accountancyeurope.eu/publications/organisation-public-oversight-audit-profession-europe/.

Ferrell, A. 2007. Mandated disclosure and stock returns: Evidence from the over-the-counter market. *Journal of Legal Studies*, 36(2): 213–251.

Florou, A., and U. Kosi. 2015. Does mandatory IFRS adoption facilitate debt financing? *Review of Accounting Studies*, 20(4): 1407–1456.

Fogarty, T.J. 1996. The imagery and reality of peer review in the US: Insights from institutional theory. *Accounting, Organizations and Society,* 21(2–3): 243–267.

Francis, J.R. 2011. A framework for understanding and researching audit quality. *Auditing: A Journal of Practice and Theory,* 30(2): 125–152.

Francis, J.R., P.N. Michas, and S.E. Seavey. 2013. Does audit market concentration harm the quality of audited earnings? Evidence from audit markets in 42 countries. *Contemporary Accounting Research,* 30(1): 325–355.

Francis, J.R., D. Nanda, and X. Wang. 2006. Re-examining the effects of Regulation Fair Disclosure using foreign listed firms to control for concurrent shocks. *Journal of Accounting and Economics*, 41(3): 271–292.

Francis, J.R., and D. Wang. 2008. The joint effect of investor protection and Big 4 audits on earnings quality around the world. *Contemporary Accounting Research*, 25(1): 157–191.

FRC. 2011. *Public Oversight.* London: Financial Reporting Council. Available at: http://siteresources.worldbank.org/EXTCENFINREPREF/Resources/4152117-1270824012230/6954188-1306403013535/John_Grewe_PO_in_UK_19Apr2011_English.pdf.

FRC. 2012. *Report to the Secretary of State for Business, Innovation and Skills*. London: Financial Reporting Council.

FRC. 2016a. *Audit Firm Specific Reports*. London: Financial Reporting Council. Available at: https://www.frc.org.uk/Our-Work/Audit-and-Actuarial-Regulation/Audit-Quality-Review/Audit-firm-specific-reports.aspx.

FRC. 2016b. *Financial Reporting*. London: Financial Reporting Council. Available at: https://www.frc.org.uk/.

George, D.E.T., C.B. Ferguson, and N.A. Spear. 2013. How much does IFRS cost? IFRS adoption and audit fees. *The Accounting Review*, 88(2): 429–462.

Gintschel, A., and S. Markov. 2004. The effectiveness of Regulation FD. *Journal of Accounting and Economics*, 37(3): 293–314.

Gipper, B., C. Leuz, and M. Maffett. 2015. Public audit oversight and reporting credibility: Evidence from the PCAOB inspection regime. Finance Working Paper No. 453/2015, European Corporate Governance Institute, Brussels, Belgium.

Glover, S.M., D.F. Prawitt, and M.H. Taylor. 2009. Audit standard setting and inspection for US public companies: A critical assessment and recommendations for fundamental change. *Accounting Horizons,* 23(2): 221–237.

Goelzerat, D.L. 2005. Speech to the Colorado Society of CPAs, 12 December. Public Company Accounting Oversight Board, Washington, DC.

Gomes, A., G. Gorton, and L. Madureira. 2007. SEC Regulation Fair Disclosure, information, and the cost of capital. *Journal of Corporate Finance*, 13(2–3): 300–334.

Gordon, E., B. Jorgensen, and C. Linthicum. 2010. Could IFRS replace US GAAP? A comparison of earnings attributes and informativeness in the US market. Working paper, College of Business, University of Texas at San Antonio, Tx.

Gramling, A.A., J. Krishnan, and Y. Zhang. 2011. Are PCAOB-identified audit deficiencies associated with a change in reporting decisions of triennially inspected audit firms? *Auditing: A Journal of Practice & Theory*, 30(3): 59–79.

Greenstone, M., P. Oyer, and A. Vissing-Jorgensen. 2006. Mandated disclosure, stock returns, and the 1964 Securities Acts amendments. *Quarterly Journal of Economics,* 121(2): 399–460.

Groff, M.Z., and M. Hocevar. 2009. Public oversight of the audit profession: Comparison of implemented practices in the EU and the US. *International Public Administration Review*, 7(3): 61–80.

Grumet, L. 2005. Rethinking the 'peer' in peer review. *Accounting Today,* 26 September: 6.

Gul, F.A. 2006. Auditors' response to political connections and cronyism in Malaysia. *Journal of Accounting Research,* 44(5): 931–963.

Gunny, K.A., and T.C. Zhang. 2013. PCAOB inspection reports and audit quality. *Journal of Accounting and Public Policy,* 32(2): 136–160.

Hail, L., C. Leuz, and P. Wysocki. 2010a. Global accounting convergence and the potential adoption of IFRS by the US (Part I): Conceptual underpinnings and economic analysis. *Accounting Horizons,* 24(3): 355–394.

Hail, L., C. Leuz, and P. Wysocki. 2010b. Global accounting convergence and the potential adoption of IFRS by the US (Part II): Political factors and future scenarios for US accounting standards. *Accounting Horizons*, 24(4): 567–588.

Heflin, F., K. Shaw, and J. Wild. 2005. Disclosure policy and market liquidity: Impact of depth quotes and order sizes. *Contemporary Accounting Research*, 22(4): 829–866.

Hermanson, D.R., R.W. Houston, and J.C. Rice. 2007. PCAOB inspections of smaller CPA firms: Initial evidence from inspection reports. *Accounting Horizons*, 21(2): 137–152.

Hermanson, D.R., and Z. Ye. 2009. Why do some accelerated filers with SOX Section 404 material weaknesses provide early warning under Section 302? *Auditing: A Journal of Practice and Theory*, 28(2): 247–271.

Hilary, G., and C. Lennox. 2005. The credibility of self-regulation: Evidence from the accounting profession's peer review program. *Journal of Accounting and Economics*, 40: 211–229.

Horton, J., I. Tuna, and A. Wood. 2014. Audit partner performance: A network perspective. Working paper, London Business School, London.

IAASA. 2006. *Annual Report 2006*. Naas, Ireland: Irish Auditing and Accounting Supervisory Authority. Available at: https://www.iaasa.ie/getmedia/6a450fd2-1e23-4c52-8e9b-7c44c402db9b/Annual_Report2006.pdf.

IAASA. 2011. *Annual Report 2011*. Naas, Ireland: Irish Auditing and Accounting Supervisory Authority. Available at: https://www.iaasa.ie/getmedia/65c77ee0-c038-4752-9a23-3b86501586a7/Annual_Report2011.pdf.

ICAEW. 2018. ICAEW recommendations: A full list of ICAEW recommendations as the UK exits the European Union. ICAEW, London. Available at: https://www.icaew.com/about-icaew/act-in-the-public-interest/policy/eu-exit-recommendations/list-of recommendations.

IFIAR. 2013. Members and member profiles. The International Forum of Independent Audit Regulators, Tokyo, Japan. Available at: https://www.ifiar.org/Members.aspx.

Iliev, P. 2010. The effect of SOX Section 404: Costs, earnings quality, and stock prices. *Journal of Finance*, 65(3): 1163–1196.

Jain, P.K., J.-C. Kim, and Z. Rezaee. 2008. The Sarbanes-Oxley Act of 2002 and market liquidity. *The Financial Review*, 43(3): 361–382.

Jain, P., and Z. Rezaee. 2006. The Sarbanes-Oxley Act of 2002 and capital-market behavior: Early evidence. *Contemporary Accounting Research*, 23(3): 629–654.

Jarrell, G. 1981. The economic effects of federal regulation of the market for new security issues. *Journal of Law and Economics*, 24(3): 613–675.

Jensen, M., and W. Meckling. 1976. Theory of the firm: Managerial behavior, agency costs, and ownership structure. *Journal of Financial Economics*, 3(4): 305–360.

Jones, J.J. 1991. Earnings management during import relief investigations. *Journal of Accounting Research*, 29(2): 193–228.

Kang, Q., Q. Liu, and R. Qi. 2010. The Sarbanes-Oxley Act and corporate investment: A structural assessment. *Journal of Financial Economics*, 96(2): 291–305.

Kaufmann, D., A. Kraay, and M. Mastruzzi. 2009. Governance matters VIII: Governance indicators for 1996–2008. World Bank Policy Research Working Paper No. 4978, World Bank, Washington, DC. Available at http://papers.ssrn.com/sol3/Papers.cfm?abstract_id=1424591.

Kim, J.B., X. Liu, and L. Zheng. 2012. The impact of mandatory IFRS adoption on audit fees: Theory and evidence. *The Accounting Review*, 87(6): 2061–2094.

Kim, J.B., B.Y. Song, and L. Zhang. 2011. Internal control weakness and bank loan contracting: Evidence from SOX Section 404. *The Accounting Review*, 86(4): 1157–1188

Knechel, W.R., G.V. Krishnan, M. Pevzner, L.B. Shefchik, and U.K. Velury. 2013. Audit quality: Insights from the academic literature. *Auditing: A Journal of Practice and Theory*, 32(Suppl. 1): 385–421.

Koh, K., D. Matsumoto, and S. Rajgopal. 2008. Meeting or beating analyst expectations in the post-scandals world: Changes in stock market rewards and managerial actions. *Contemporary Accounting Research*, 25(4): 1067–1098.

Krishnan, J., J. Krishnan, and H. Song. 2017. PCAOB international inspections and audit quality. *The Accounting Review*, 92(5): 143–166.

Lamoreaux, P. 2013. Does PCAOB inspection exposure affect auditor reporting decisions? Phd dissertation, University of Arizona, Tucson, AZ. Available at https://arizona.openrepository.com/arizona/bitstream/10150/306135/1/azu_etd_12982_sip1_m.pdf.

Lamoreaux, P. 2016. Does PCAOB inspection access improve audit quality? An examination of foreign firms listed in the United States. *Journal of Accounting and Economics*, 61: 313–337.

Lennox, C. 2009. The changing regulatory landscape: Editorial. *International Journal of Auditing*, 13(2): 79–85.

Lennox, C., and B. Li. 2012. The consequences of protecting audit partners' personal assets from the threat of liability. *Journal of Accounting and Economics*, 54(2–3): 154–173.

Lennox, C., and J. Pittman. 2010. Auditing the auditors: Evidence on the recent reforms to the external monitoring of audit firms. *Journal of Accounting and Economics*, 49(1–2): 84–103.

Leuz, C., and C. Schrand. 2009. Disclosure and the cost of capital: Evidence from firms' responses to the Enron shock. NBER Working Paper No. 14897, National Bureau of Economic Research, Cambridge, MA.

Leuz, C., and P.D. Wysocki. 2016. The economics of disclosure and financial reporting regulation: Evidence and suggestions for future research. *Journal of Accounting Research*, 54(2): 525–620.

Lyon, J.D., and M.W. Maher. 2005. The importance of business risk in setting audit fees: Evidence from cases of client misconduct. *Journal of Accounting Research*, 43(1): 133–151.

Malsch, B., and Y. Gendron. 2011. Reining in auditors: On the dynamics of power surrounding an 'innovation' in the regulatory space. *Accounting, Organizations and Society*, 36(7): 456–476.

Michas, P.N. 2011. The importance of audit profession development in emerging market countries. *The Accounting Review,* 86(5): 1731–1764.

Nagy, A.L. 2014. PCAOB quality control inspection reports and auditor reputation. *Auditing: A Journal of Practice & Theory*, 33(3): 87–104.

Niskanen, W.A. 2006. Congress should *repeal* the Sarbanes-Oxley Act. *Baltimore Examiner*, 2 August. Available at: https://www.cato.org/publications/commentary/congress-should-repeal-sarbanesoxley-act.

Numan, W., and M. Willekens. 2012. An empirical test of spatial competition in the audit market. *Journal of Accounting and Economics*, 53(1–2): 450–465.

Offermanns, M. 2011. Economic consequences of public oversight of the audit market. PhD thesis, University of Maastricht, Maastricht, Netherlands. Available at: https://cris.maastrichtuniversity.nl/portal/files/1105421/guid-55eed8e9-6b15-4195-a09c-e409c6a6bb9a-ASSET1.0.

Osma, B.G., Gisbert, A., and E. De las Heras. 2014. Public oversight systems for statutory auditors in the European Union. *European Journal of Law and Economics*, 44(3): 517–552.

Palmrose, Z.V. 2006. Maintaining the value and viability of independent auditors as gatekeepers under SOX: An auditing master proposal. In Y. Fuchita and R. E. Litan (Eds.), *Financial Gatekeepers: Can They Protect Investors?* (pp.103–135). Washington, DC: Brookings Institution Press.

Peek, E., R. Meuwissen, F. Moers, and A. Vaanstraelen. 2013. Comparing abnormal accruals estimates across samples: An international test. *European Accounting Review,* 22(3): 533–572.

Petersen, M.A. 2009. Estimating standard errors in finance panel data sets: Comparing approaches. *Review of Financial Studies,* 22(1): 435–480.

Ross, S. 1973. The economic theory of agency: The principal's problem. *American Economic Review*, 63(2): 134–139.

Samsonova-Taddei, A., and C. Humphrey. 2015. Risk and the construction of a European audit policy agenda: The case of auditor liability. *Accounting, Organizations and Society*, 41: 55–72.

Shroff, N. 2015. Real effects of financial reporting quality and credibility: Evidence from the PCAOB regulatory regime. Working paper, Massachusetts Institute of Technology, Cambridge, MA. Available at: http://pcaobus.org/News/ Events/Documents/10222015_CEA/Financial-Reporting-Quality-Shroff.pdf.

Sidhu, B., T. Smith, R. Whaley, and R. Willis. 2008. Regulation Fair Disclosure and the cost of adverse selection. *Journal of Accounting Research*, 46(3): 697–728.

Simnett, R., and A. Smith, 2005. Public oversight: An international approach to auditing. In T. Campbell, and K. Houghton (Eds.), *Ethics and Auditing* (pp.45–62). Canberra, Australia: ANU E-Press.

Simon, C. 1989. The effect of the 1933 Securities Act on investor information and the performance of new issues. *American Economic Review*, 79(3): 295–318.

Simunic, D.A. 1980. The pricing of audit services: Theory and evidence. *Journal of Accounting Research*, 18(1): 161–190.

Skinner, D.J., and Srinivasan, S. 2012. Audit quality and auditor reputation: Evidence from Japan. *The Accounting Review*, 87(5): 1737–1765.

Stigler, G. 1964. Public regulation of the securities markets. *Journal of Business*, 37(2): 117–142.

Teoh, S.W., and T.J. Wong. 1993. Perceived auditor quality and the earnings response coefficient. *The Accounting Review*, 68(2): 346–366.

UK Parliament. 2016. *Companies Act 2006*. London: HMSO: Available at: http://www.legislation.gov.uk/ukpga/2006/46/contents.

Wang, B., and Q.Q. Xin. 2011. Auditor choice and accruals patterns of cross-listed firms. *China Journal of Accounting Research*, 4(4): 233–251.

Weber, J., M. Willenborg, and J. Zhang. 2008. Does auditor reputation matter? The case of KPMG Germany and ComROAD AG. *Journal of Accounting Research*, 46(4): 941–972.

Wieczynska, M. 2016. The ‘big’ consequences of IFRS: How and when does the adoption of IFRS benefit global accounting firms? *The Accounting Review*, 1(4): 1257–1283.

Wilson, R. 1968. The theory of syndicates. *Econometrica*, 36(1): 119–132.

Wysocki, P.D. 2004. Discussion of ultimate ownership, income management, and legal and extra-legal institutions. *Journal of Accounting Research,* 42(2): 463–474.